The Journal of Neuroscience

Volume 16
Numbers 1 through 24
1996

Copyright © 1996 by the Society for Neuroscience

The Journal of Neuroscience

Editor-in-Chief
David C. Van Essen

Behavioral/Systems Neuroscience

Section Editors
Allan I. Basbaum
Thomas J. Carew
Stephen G. Lisberger
Roy A. Wise

Associate Editors
Elizabeth D. Abercrombie
Jill B. Becker
Terry J. Crow
Antonio Damasio
Michael Davis
Nigel Daw
Samuel A. Deadwyler
John P. Donoghue
Rodney Douglass
Robert W. Dykes
Howard Eichenbaum
Martha J. Farah
Jack L. Feldman
David L. Ferster
Okihide Hikosaka
Raymond P. Kesner
David Lavond
Patrick W. Mantyh
John Maunsell
David McCormick
J. Anthony Movshon
J. Victor Nadler
Eric J. Nestler
Donata Oertel
Steven E. Petersen
Martin R. Ralph
Paul E. Sawchenko
Malcolm N. Semple
John F. Soechting
Peter Somogyi
Mircea Steriade
D. James Surmeier
Clifford Woolf
Lea Ziskind-Conhaim
Stuart Zola

Cellular/Molecular Neuroscience

Section Editors
Moses V. Chao
Irwin Levitan
Gail Mandel
Eve E. Marder
Randall R. Reed
Gary L. Westbrook

Associate Editors
George J. Augustine, Jr.
Barbara A. Barres
Mark K. Bennett
Scott T. Brady
Ronald L. Calabrese
Patrick Charnay
Dennis W. Choi
David R. Colman
Barry W. Connors
David R. Copenhagen
Pietro DeCamilli
Raymond J. Dingledine
Kathleen Dunlap
Aaron Fox
Richard H. Goodman
Philip G. Haydon
Karl Herrup
Lily Jan
David J. Julius
Leonard K. Kaczmarek
Mary B. Kennedy
Christopher J. Lingle
Peter Lipton
John E. Lisman
Philip Lloyd
Thomas F.J. Martin
Mark L. Mayer
Bruce S. McEwen
Jeremy Nathans
Roger Nicoll
James Patrick
Louis French Reichardt
Peter B. Sargent
Gerald Schellenberg
Peter H. Seeburg
Michael Sheetz
Steven A. Siegelbaum
Larry Zipursky

Developmental Neuroscience

Section Editors
Marianne Bronner-Fraser
Dennis D.M. O'Leary

Associate Editors
David Anderson
Yves Barde
Scott Fraser
Lawrence C. Katz
Christopher Kintner
John Kuwada
Arthur D. Lander
Lynn T. Landmesser
Pat Levitt
Jeffrey W. Lichtman
Andrew G.S. Lumsden
Carol Ann Mason
Susan K. McConnell
Ronald D. McKay
Jonathan Raper
Angeles B. Ribera
Joshua R. Sanes
Martin Schwab
J.H. Pate Skene
Brent B. Stanfield
Kai G. Zinn

Editorial Staff
Sherry Dixon
Stacie Lemick
Jason Pepling
Stacey Plotnick
Mary L. Schmidt
Heather Dalterio Joseph

The Journal of Neuroscience (ISSN 0270–6474) is the official journal of the Society for Neuroscience, 11 Dupont Circle, NW, Suite 500, Washington, DC 20036. As of January 1, 1996, it is published semi-monthly by the Society, one volume a year.

Subscriptions are on a per-volume basis beginning with the January 1 issue. The volume 16 (1996) institutional rate for the U.S. is $950; $1075 (includes air-expedited delivery) elsewhere. The individual nonmember rate for the U.S. is $250; $325 elsewhere. Single copies for the U.S. are $48; $53 elsewhere. Nonmembers should direct subscription orders, back issue requests, and changes of address to *The Journal of Neuroscience*, Subscription Services, 11 Dupont Circle, NW, Suite 500, Washington, DC 20036, phone 202-462-6688, fax 202-462-1547. Society for Neuroscience members interested in subscribing to the *Journal* at a reduced rate should contact the Society's Membership Department (phone 202-462-6688). Society members should also direct back issue requests and changes of address to the Society.

Advertising inquiries should be addressed to Kristofer Herlitz, The Herlitz Company, Inc., 1890 Palmer Avenue; Suite 202A, Larchmont, NY 10538-3031, phone 914-833-1979, fax 914-833-0929.

Microfilm and *microfiche* inquiries should be directed to University Microfilms Inc., 300 North Zeeb Road, Ann Arbor, MI 48106.

Reprints of individual articles are available only from the authors.

Photocopies. The *Journal* is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, fax 508-750-4744. Authorization to photocopy items for the internal or personal use of specific clients is granted by the Society for Neuroscience provided that the copier pay to the Center the $5.00 copy fee stated in the code on the first page of each article. Special requests, such as for general distribution, resale, advertising, and promotional purposes or for creating new works, should be directed to Journal Permissions, Society for Neuroscience, 11 Dupont Circle, NW, Suite 500, Washington, DC 20036, fax 202-462-1547.

Postmaster: Send address changes to *The Journal of Neuroscience*, Society for Neuroscience Membership Department, 11 Dupont Circle, NW, Suite 500, Washington, DC 20036. Periodicals postage paid at Washington, DC, and additional mailing offices. Canada Post International Publications Mail (Canadian Distribution) Sales Agreement No. 0895369.

The Journal of Neuroscience is indexed by *BIOSIS, Brain Information Service, Chemical Abstracts, Current Contents, Excerpta Medica, Index Medicus, Index to Scientific Reviews, Psychological Abstracts, PsycINFO,* and *PsycLIT*.

♾ The *Journal* is printed on acid-free paper that meets the minimum requirements of ANSI Standard Z39.48–1984 (Permanence of Paper).

Copyright © 1996 Society for Neuroscience. All rights reserved.

VOLUME CONTENTS

NUMBER 1, JANUARY 1996

1 A Strongly Inwardly Rectifying K^+ Channel that Is Sensitive to ATP
Anthony Collins, Michael S. German, Yuh Nung Jan, Lily Y. Jan, and Biao Zhao

10 Expression and Characterization of *Aplysia* Protein Kinase C: A Negative Regulatory Role for the E Region
Wayne S. Sossin, Xiaotang Fan, and Farzad Saberi

19 Selective Alterations in Gene Expression for NMDA Receptor Subunits in Prefrontal Cortex of Schizophrenics
S. Akbarian, N. J. Sucher, D. Bradley, A. Tafazzoli, D. Trinh, W. P. Hetrick, S. G. Potkin, C. A. Sandman, W. E. Bunney, Jr., and E. G. Jones

31 mRNA Expression of KIF1A, KIF1B, KIF2, KIF3A, KIF3B, KIF4, KIF5, and Cytoplasmic Dynein during Axonal Regeneration
Reiko Takemura, Takao Nakata, Yasushi Okada, Hiroto Yamazaki, Zhizeng Zhang, and Nobutaka Hirokawa

36 Metabotropic Glutamate Receptor Modulation of Voltage-Gated Ca^{2+} Channels Involves Multiple Receptor Subtypes in Cortical Neurons
Sukwoo Choi and David M. Lovinger

46 Calcium-Independent Activation of the Secretory Apparatus by Ruthenium Red in Hippocampal Neurons: A New Tool to Assess Modulation of Presynaptic Function
Louis-Eric Trudeau, Robert T. Doyle, Dennis G. Emery, and Philip G. Haydon

55 Components of Glial Responses to Exogenous and Synaptic Glutamate in Rat Hippocampal Microcultures
Steven Mennerick, Ann Benz, and Charles F. Zorumski

65 11β-Hydroxysteroid Dehydrogenase in Cultured Hippocampal Cells Reactivates Inert 11-Dehydrocorticosterone, Potentiating Neurotoxicity
Vidya Rajan, Christopher R. W. Edwards, and Jonathan R. Seckl

71 *In Vitro* Ischemia Promotes Calcium Influx and Intracellular Calcium Release in Hippocampal Astrocytes
Steven Duffy and Brian A. MacVicar

82 Regulation of Intracellular Cl^- Levels by Na^+-Dependent Cl^- Cotransport Distinguishes Depolarizing from Hyperpolarizing $GABA_A$ Receptor-Mediated Responses in Spinal Neurons
Jeffrey Rohrbough and Nicholas C. Spitzer

92 Taurine Induces a Long-Lasting Increase of Synaptic Efficacy and Axon Excitability in the Hippocampus
Mario Galarreta, Julián Bustamante, Rafael Martín del Río, and José M. Solís

103 The α6 Subunit of the $GABA_A$ Receptor Is Concentrated in Both Inhibitory and Excitatory Synapses on Cerebellar Granule Cells
Zoltan Nusser, Werner Sieghart, F. Anne Stephenson, and Peter Somogyi

115 Calcium-Dependent Inactivation of Calcium Current in Synaptic Terminals of Retinal Bipolar Neurons
Henrique von Gersdorff and Gary Matthews

123 Synaptically Released Histamine Increases Dye Coupling among Vasopressinergic Neurons of the Supraoptic Nucleus: Mediation by H_1 Receptors and Cyclic Nucleotides
G. I. Hatton and Q. Z. Yang

130 Rise in Intracellular Calcium via a Nongenomic Effect of Allopregnanolone in Fetal Rat Hypothalamic Neurons
Govindan Dayanithi and Lucia Tapia-Arancibia

137 Axonal Transport and Distribution of Synaptobrevin I and II in the Rat Peripheral Nervous System
Jia-Yi Li, Lambert Edelmann, Reinhard Jahn, and Annica Dahlström

148 Localization of L-Type Ca^{2+} Channels at Perisynaptic Glial Cells of the Frog Neuromuscular Junction
Richard Robitaille, Marie-Josée Bourque, and Sylvie Vandaele

159 Acid Efflux from Retinal Glial Cells Generated by Sodium Bicarbonate Cotransport
Eric A. Newman

169 *In Vivo*, *In Vitro*, and Computational Analysis of Dendritic Calcium Currents in Thalamic Reticular Neurons
Alain Destexhe, Diego Contreras, Mircea Steriade, Terrence J. Sejnowski, and John R. Huguenard

186 Properties of the Endosomal–Lysosomal System in the Human Central Nervous System: Disturbances Mark Most Neurons in Populations at Risk to Degenerate in Alzheimer's Disease
Anne M. Cataldo, Deborah J. Hamilton, Jody L. Barnett, Peter A. Paskevich, and Ralph A. Nixon

200 AMPA Receptor Activation Is Rapidly Toxic to Cortical Astrocytes when Desensitization Is Blocked
Jeannie C. David, Kelvin A. Yamada, Mahesh R. Bagwe, and Mark P. Goldberg

210 MN20, a D2 Cyclin, Is Transiently Expressed in Selected Neural Populations during Embryogenesis
M. Elizabeth Ross, Michelle L. Carter, and Jang Hern Lee

220 Persistent Dentate Granule Cell Hyperexcitability after Neonatal Infection with Lymphocytic Choriomeningitis Virus
Bradley D. Pearce, Scott C. Steffensen, Alyssa D. Paoletti, Steven J. Henriksen, and Michael J. Buchmeier

229 Differential Regulation of Adrenergic Receptor Development by Sympathetic Innervation
Beth A. Habecker, Nell M. Malec, and Story C. Landis

238 The Molecular Composition of Neuronal Microfilaments Is Spatially and Temporally Regulated
Ron Weinberger, Galina Schevzov, Peter Jeffrey, Kylie Gordon, Mark Hill, and Peter Gunning

253 Downregulation of Cu/Zn Superoxide Dismutase Leads to Cell Death via the Nitric Oxide–Peroxynitrite Pathway
Carol M. Troy, Daniele Derossi, Alain Prochiantz, Lloyd A. Greene, and Michael L. Shelanski

262 Sequence of Stress-Induced Alterations in Indices of Synaptic and Transcriptional Activation in Parvocellular Neurosecretory Neurons
K. J. Kovács and P. E. Sawchenko

274 Drugs of Abuse and Stress Increase the Expression of GluR1 and NMDAR1 Glutamate Receptor Subunits in the Rat Ventral Tegmental Area: Common Adaptations among Cross-Sensitizing Agents
Lawrence W. Fitzgerald, Jordi Ortiz, Azita G. Hamedani, and Eric J. Nestler

283 Laminar Compartmentalization of $GABA_A$-Receptor Subtypes in the Spinal Cord: An Immunohistochemical Study
Stephan Bohlhalter, Oliver Weinmann, Hanns Mohler, and Jean-Marc Fritschy

298 The Synaptic Drive from the Spinal Locomotor Network to Motoneurons in the Newborn Rat
Jean-René Cazalets, Michel Borde, and François Clarac

307 A Dendritic $GABA_A$-Mediated IPSP Regulates Facilitation of NMDA-Mediated Responses to Burst Stimulation of Afferent Fibers in Piriform Cortex
Evan D. Kanter, Ajay Kapur, and Lewis B. Haberly

313 High-Speed Optical Imaging of Afferent Flow through Rat Olfactory Bulb Slices: Voltage-Sensitive Dye Signals Reveal Periglomerular Cell Activity
David M. Senseman

325 The Effect of Efferent Stimulation on Basilar Membrane Displacement in the Basal Turn of the Guinea Pig Cochlea
Euan Murugasu and Ian J. Russell

333 Medial Preoptic Area Afferents to Periaqueductal Gray Medullo-Output Neurons: A Combined Fos and Tract Tracing Study
Tilat A. Rizvi, Anne Z. Murphy, Matthew Ennis, Michael M. Behbehani, and Michael T. Shipley

345 The Interaction of Imposed and Inherent Olfactory Mucosal Activity Patterns and their Composite Representation in a Mammalian Species Using Voltage-Sensitive Dyes
Paul F. Kent, Maxwell M. Mozell, Stephen J. Murphy, and David E. Hornung

354 Hippocampal Ensemble Activity during Spatial Delayed-Nonmatch-to-Sample Performance in Rats
Sam A. Deadwyler, Terence Bunn, and Robert E. Hampson

373 NMDA Receptor Antagonists Impair Prefrontal Cortex Function as Assessed via Spatial Delayed Alternation Performance in Rats: Modulation by Dopamine
Anita Verma and Bita Moghaddam

380 Neuronal Circuitry for Comparison of Timing in the Electrosensory Lateral Line Lobe of the African Wave-Type Electric Fish *Gymnarchus niloticus*
Masashi Kawasaki and Yuan-Xing Guo

392 Synchronization of Fast (30–40 Hz) Spontaneous Cortical Rhythms during Brain Activation
M. Steriade, F. Amzica, and D. Contreras

418 The Selective Neuronal NO Synthase Inhibitor 7-Nitro-Indazole Blocks Both Long-Term Potentiation and Depotentiation of Field EPSPs in Rat Hippocampal CA1 *In Vivo*
Ciaran Doyle, Christian Hölscher, Michael J. Rowan, and Roger Anwyl

NUMBER 2, JANUARY 1996

425 **Feature Article:** Presynaptic Facilitation Revisited: State and Time Dependence
John H. Byrne and Eric R. Kandel

436 The Dopamine Transporter Is Localized to Dendritic and Axonal Plasma Membranes of Nigrostriatal Dopaminergic Neurons
Melissa J. Nirenberg, Roxanne A. Vaughan, George R. Uhl, Michael J. Kuhar, and Virginia M. Pickel

448 A Novel Neuronal P_{2x} ATP Receptor Ion Channel with Widespread Distribution in the Brain
Philippe Séguéla, Ali Haghighi, Jean-Jacques Soghomonian, and Ellis Cooper

456 Fractional Calcium Current through Neuronal AMPA-Receptor Channels with a Low Calcium Permeability
Filippo Tempia, Masanobu Kano, Ralf Schneggenburger, Claudia Schirra, Olga Garaschuk, Timothy Plant, and Arthur Konnerth

467 Molecular and Developmental Characterization of Novel cDNAs of the Myelin-Associated/Oligodendrocytic Basic Protein
Andreas Holz, Nicole Schaeren-Wiemers, Christoph Schaefer, Uwe Pott, Raymond J. Colello, and Martin E. Schwab

478 Regulatory Differences in the Stress Response of Hippocampal Neurons and Glial Cells after Heat Shock
Charles J. Marcuccilli, Sameer K. Mathur, Richard I. Morimoto, and Richard J. Miller

486 Overexpression of Bcl-2 with Herpes Simplex Virus Vectors Protects CNS Neurons against Neurological Insults *In Vitro* and *In Vivo*
Matthew S. Lawrence, Dora Y. Ho, Guo Hua Sun, Gary K. Steinberg, and Robert M. Sapolsky

497 Increased Antioxidant Enzyme Activity in Amyloid β Protein-Resistant Cells
Yutaka Sagara, Richard Dargusch, F. George Klier, David Schubert, and Christian Behl

506 Developmental Expression and Functional Characterization of the Potassium-Channel Subunit Kv3.1b in Parvalbumin-Containing Interneurons of the Rat Hippocampus
Jing Du, Lei Zhang, Michael Weiser, Bernardo Rudy, and Chris J. McBain

519 Developmental Regulation of the Toxin Sensitivity of Ca^{2+}-Permeable AMPA Receptors in Cortical Glia
Olimpia Meucci, Alessandro Fatatis, James A. Holzwarth, and Richard J. Miller

531 Microtubule Assembly and Turnover in Growing Axons
Yan Li and Mark M. Black

545 Mechanisms of Secondary Injury to Spinal Cord Axons *In Vitro*: Role of Na^+, Na^+–K^+-ATPase, the Na^+–H^+ Exchanger, and the Na^+–Ca^{2+} Exchanger
Sandeep K. Agrawal and Michael G. Fehlings

553 Kinetics of Stimulus-Coupled Secretion in Dialyzed Bovine Chromaffin Cells in Response to Trains of Depolarizing Pulses
Elizabeth P. Seward and Martha C. Nowycky

563 Recovery Phase of the Murine Rod Photoresponse Reconstructed from Electroretinographic Recordings
Arkady L. Lyubarsky and Edward N. Pugh, Jr.

572 Excitatory Actions of Norepinephrine on Multiple Classes of Hippocampal CA1 Interneurons
Dwight E. Bergles, Van A. Doze, Daniel V. Madison, and Stephen J. Smith

586 A Slowly Inactivating Potassium Current in CA3 Pyramidal Cells of Rat Hippocampus *In Vitro*
Anita Lüthi, Beat H. Gähwiler, and Urs Gerber

595 Estradiol Reduces Calcium Currents in Rat Neostriatal Neurons via a Membrane Receptor
Paul G. Mermelstein, Jill B. Becker, and D. James Surmeier

605 The Role of Adenosine A_{2a} Receptors in Regulating GABAergic Synaptic Transmission in Striatal Medium Spiny Neurons
Akihisa Mori, Tomomi Shindou, Michio Ichimura, Hiromi Nonaka, and Hiroshi Kase

612 Specificity of Sympathetic Preganglionic Projections in the Chick Is Influenced by the Somitic Mesoderm
Joseph W. Yip

621 Immunohistochemical Localization of Ciliary Neurotrophic Factor Receptor α Expression in the Rat Nervous System
A. John MacLennan, Emily N. Vinson, Lianne Marks, Diana L. McLaurin, Marylynn Pfeifer, and Nancy Lee

631 Neuronal Activity Differentially Regulates NMDA Receptor Subunit Expression in Cerebellar Granule Cells
Mary Lou Vallano, Bertrand Lambolez, Etienne Audinat, and Jean Rossier

640 Selective Failure of Brain-Derived Neurotrophic Factor mRNA Expression in the Cerebellum of *Stargazer*, a Mutant Mouse with Ataxia
Xiaoxi Qiao, Franz Hefti, Beat Knusel, and Jeffrey L. Noebels

649 Regeneration of Sensory Cells after Laser Ablation in the Lateral Line System: Hair Cell Lineage and Macrophage Behavior Revealed by Time-Lapse Video Microscopy
Jay E. Jones and Jeffrey T. Corwin

663 Developmental Expression and Biochemical Analysis of Conulin, a Protein Secreted from a Subset of Neuronal Growth Cones
Diego Sánchez, María D. Ganfornina, and Michael J. Bastiani

675 Brain-Derived Neurotrophic Factor Promotes the Differentiation of Various Hippocampal Nonpyramidal Neurons, Including Cajal–Retzius Cells, in Organotypic Slice Cultures
Serge Marty, Patrick Carroll, Alessandro Cellerino, Eero Castrén, Volker Staiger, Hans Thoenen, and Dan Lindholm

688 Identification and Molecular Characterization of Unc-33-Like Phosphoprotein (Ulip), a Putative Mammalian Homolog of the Axonal Guidance-Associated *unc-33* Gene Product
Tamara Byk, Tomáš Dobransky, Carmen Cifuentes-Diaz, and André Sobel

702 Cell-Specific Differential Expression of Na^+-Channel β1-Subunit mRNA in the Olfactory System during Postnatal Development and after Denervation
Shunsuke Sashihara, Charles A. Greer, Youngsuk Oh, and Stephen G. Waxman

714 Modulation of Dopamine Efflux in the Nucleus Accumbens after Cholinergic Stimulation of the Ventral Tegmental Area in Intact, Pedunculopontine Tegmental Nucleus-Lesioned, and Laterodorsal Tegmental Nucleus-Lesioned Rats
Charles D. Blaha, Laura F. Allen, Sheela Das, Wendy L. Inglis, Mary P. Latimer, Steven R. Vincent, and Philip Winn

723 Characterization of a Descending System that Enables Crossed Group II Inhibitory Reflex Pathways in the Cat Spinal Cord
N. C. Aggelopoulos, M. J. Burton, R. W. Clarke, and S. A. Edgley

730 Spinal Cord NMDA Receptors Modulate Peripheral Immune Responses and Spinal Cord c-*fos* Expression after Immune Challenge in Rats Subjected to Unilateral Mononeuropathy
Uri Herzberg, Michael P. Murtaugh, Dianne Carroll, and Alvin J. Beitz

744 Cholinergic Regulation of the Suprachiasmatic Nucleus Circadian Rhythm via a Muscarinic Mechanism at Night
Chen Liu and Martha U. Gillette

752 Simultaneously Recorded Single Units in the Frontal Cortex Go through Sequences of Discrete and Stable States in Monkeys Performing a Delayed Localization Task
Eyal Seidemann, Isaac Meilijson, Moshe Abeles, Hagai Bergman, and Eilon Vaadia

769 Functional Organization of a Neural Map in the Cricket Cercal Sensory System
Gwen A. Jacobs and Frédéric E. Theunissen

785 Use-Dependent Alterations of Movement Representations in Primary Motor Cortex of Adult Squirrel Monkeys
R. J. Nudo, G. W. Milliken, W. M. Jenkins, and M. M. Merzenich

808 A Positron Emission Tomography Study of the Short-Term Maintenance of Verbal Information
Julie A. Fiez, Elizabeth A. Raife, David A. Balota, Jacob P. Schwarz, Marcus E. Raichle, and Steven E. Petersen

823 Binding of Hippocampal CA1 Neural Activity to Multiple Reference Frames in a Landmark-Based Navigation Task
Katalin M. Gothard, William E. Skaggs, Kevin M. Moore, and Bruce L. McNaughton

836 Neonatal Deprivation of Maternal Touch May Suppress Ornithine Decarboxylase via Downregulation of the Proto-oncogenes c-*myc* and *max*
Shiying Wang, Jorge V. Bartolome, and Saul M. Schanberg

843 Interactions between the Neural Networks for Escape and Swimming in Goldfish
Kurt R. Svoboda and Joseph R. Fetcho

853 Factors Regulating the Reversibility of Long-Term Potentiation
Ursula Stäubli and Daniel Chun

861 Receptive-Field Plasticity in the Adult Auditory Cortex Induced by Hebbian Covariance
Scott J. Cruikshank and Norman M. Weinberger

NUMBER 3, FEBRUARY 1996

877 Metabolic Coupling between Glia and Neurons
Marco Tsacopoulos and Pierre J. Magistretti

886 Fibroblast Growth Factor-2 Protects Entorhinal Layer II Glutamatergic Neurons from Axotomy-Induced Death
Daniel A. Peterson, Carrie A. Lucidi-Phillipi, Douglas P. Murphy, Jasodhara Ray, and Fred H. Gage

899 Amyloidogenic Processing of the Human Amyloid Precursor Protein in Primary Cultures of Rat Hippocampal Neurons
Mikael Simons, Bart De Strooper, Gerd Multhaup, Pentti J. Tienari, Carlos G. Dotti, and Konrad Beyreuther

909 Sensory Transduction in Vomeronasal Neurons: Evidence for Gαo, Gαi2, and Adenylyl Cyclase II as Major Components of a Pheromone-Signaling Cascade
Anna Berghard and Linda B. Buck

919 Vasoactive Intestinal Peptide, Pituitary Adenylate Cyclase-Activating Peptide, and Noradrenaline Induce the Transcription Factors CCAAT/Enhancer Binding Protein (C/EBP)-β and C/EBPδ in Mouse Cortical Astrocytes: Involvement in cAMP-Regulated Glycogen Metabolism
Jean-René Cardinaux and Pierre J. Magistretti

930 A G-Protein-Activated Inwardly Rectifying K^+ Channel (GIRK4) from Human Hippocampus Associates with Other GIRK Channels
Alexander Spauschus, Klaus-Ulrich Lentes, Erhard Wischmeyer, Elke Dißmann, Christine Karschin, and Andreas Karschin

939 DNA Mismatch Repair and DNA Methylation in Adult Brain Neurons
P. J. Brooks, Cheryl Marietta, and David Goldman

946 Axons Regulate the Distribution of Schwann Cell Microtubules
Grahame Kidd, S. Brian Andrews, and Bruce D. Trapp

955 Distribution of High-Conductance Ca^{2+}-Activated K^+ Channels in Rat Brain: Targeting to Axons and Nerve Terminals
Hans-Günther Knaus, Christoph Schwarzer, Robert O. A. Koch, Andreas Eberhart, Gregory J. Kaczorowski, Hartmut Glossmann, Frank Wunder, Olaf Pongs, Maria L. Garcia, and Günther Sperk

964 Proneuropeptide Y Processing in Large Dense-Core Vesicles: Manipulation of Prohormone Convertase Expression in Sympathetic Neurons Using Adenoviruses
Luc Paquet, Bernard Massie, and Richard E. Mains

974 Colocalization of GABA, Glycine, and their Receptors at Synapses in the Rat Spinal Cord
A. J. Todd, C. Watt, R. C. Spike, and W. Sieghart

983 Activity-Dependent Short-Term Enhancement of Intercellular Coupling
Alberto E. Pereda and Donald S. Faber

993 *In Vitro* Analysis of Optimal Stimuli for Phase-Locking and Time-Delayed Modulation of Firing in Avian Nucleus Laminaris Neurons
A. D. Reyes, E. W. Rubel, and W. J. Spain

1008 Modulation of Calcium Efflux from Cultured Rat Dorsal Root Ganglion Neurons
John L. Werth, Yuri M. Usachev, and Stanley A. Thayer

1016 Inhibition of the Kv4 (*Shal*) Family of Transient K^+ Currents by Arachidonic Acid
Alvaro Villarroel and Thomas L. Schwarz

1026 Isoproterenol Potentiates Synaptic Transmission Primarily by Enhancing Presynaptic Calcium Influx via P- and/or Q-Type Calcium Channels in the Rat Amygdala
Chiung-Chun Huang, Kuei-Sen Hsu, and Po-Wu Gean

1034 β-Amyloid-Related Peptides Inhibit Potassium-Evoked Acetylcholine Release from Rat Hippocampal Slices
Satyabrata Kar, David Seto, Pierrette Gaudreau, and Remi Quirion

1041 Nimodipine Accelerates Axonal Sprouting after Surgical Repair of Rat Facial Nerve
Doychin N. Angelov, Wolfram F. Neiss, Michael Streppel, Jonas Andermahr, Konrad Mader, and Eberhard Stennert

1049 Fluctuations in Relative Levels of Choline Acetyltransferase mRNA in Different Regions of the Rat Basal Forebrain across the Estrous Cycle: Effects of Estrogen and Progesterone
Robert B. Gibbs

1056 Synapse Formation and Establishment of Neuronal Polarity by P19 Embryonic Carcinoma Cells and Embryonic Stem Cells
Michael F. A. Finley, Nita Kulkarni, and James E. Huettner

1066 The Possible Role of Hydrogen Sulfide as an Endogenous Neuromodulator
Kazuho Abe and Hideo Kimura

1072 Multiple Voltage-Dependent Mechanisms Potentiate Calcium Channel Activity in Hippocampal Neurons
Ege T. Kavalali and Mark R. Plummer

1083 Immunohistochemical Characterization of Alterations in the Distribution of Amyloid Precursor Proteins and β-Amyloid Peptide after Experimental Brain Injury in the Rat
Jean E. S. Pierce, John Q. Trojanowski, David I. Graham, Douglas H. Smith, and Tracy K. McIntosh

1091 Multipotential Stem Cells from the Adult Mouse Brain Proliferate and Self-Renew in Response to Basic Fibroblast Growth Factor
Angela Gritti, E. A. Parati, L. Cova, P. Frolichsthal, R. Galli, E. Wanke, L. Faravelli, D. J. Morassutti, F. Roisen, D. D. Nickel, and Angelo L. Vescovi

1101 Mutations in *shaking-B* Prevent Electrical Synapse Formation in the *Drosophila* Giant Fiber System
Pauline Phelan, Madoka Nakagawa, Marian B. Wilkin, Kevin G. Moffat, Cahir J. O'Kane, Jane A. Davies, and Jonathan P. Bacon

1114 The Onconeural Antigen Nova-1 Is a Neuron-Specific RNA-Binding Protein, the Activity of which Is Inhibited by Paraneoplastic Antibodies
Ronald J. Buckanovich, Yolanda Y. L. Yang, and Robert B. Darnell

1123 Homogeneous Development of Electrical Excitability via Heterogeneous Ion Channel Expression
Angeles B. Ribera

1131 Postnatal Development of Membrane Properties of Layer I Neurons in Rat Neocortex
Fu-Ming Zhou and John J. Hablitz

1140 Essential Role of Filopodia in Chemotropic Turning of Nerve Growth Cone Induced by a Glutamate Gradient
James Q. Zheng, Ji-jun Wan, and Mu-ming Poo

1150 Cell Cycle Blockers Mimosine, Ciclopirox, and Deferoxamine Prevent the Death of PC12 Cells and Postmitotic Sympathetic Neurons after Removal of Trophic Support
Stephen E. Farinelli and Lloyd A. Greene

1163 Analysis of Integrin Expression on Oligodendrocytes during Axo-Glial Interaction by Using Rat–Mouse Xenocultures
Christopher E. Shaw, Richard Milner, Alastair S. Compston, and Charles ffrench-Constant

1173 Muscimol Acts in Dorsomedial but Not Paraventricular Hypothalamic Nucleus to Suppress Cardiovascular Effects of Stress
Elizabeth H. Stotz-Potter, Lynn R. Willis, and Joseph A. DiMicco

1180 Functional Morphology of the Feedback Pathway from Area 17 of the Cat Visual Cortex to the Lateral Geniculate Nucleus
Penelope C. Murphy and Adam M. Sillito

1193 Potentiation of Neuronal NMDA Response Induced by Dehydroepiandrosterone and its Suppression by Progesterone: Effects Mediated via Sigma Receptors
Richard Bergeron, Claude de Montigny, and Guy Debonnel

1203 Specificity in the Axonal Connections of Layer VI Neurons in Tree Shrew Striate Cortex: Evidence for Distinct Granular and Supragranular Systems
W. Martin Usrey and David Fitzpatrick

1219 The Effect of Depressing Glial Function in Rat Brain *In Situ* on Ion Homeostasis, Synaptic Transmission, and Neuron Survival
Carlota Largo, Pedro Cuevas, George G. Somjen, Rafael Martín del Río, and Oscar Herreras

1230 Cocaine Alters Cerebral Metabolism within the Ventral Striatum and Limbic Cortex of Monkeys
David Lyons, David P. Friedman, Michael A. Nader, and Linda J. Porrino

1239 Intracellular Dialysis of Cyclic Nucleotides Induces Inward Currents in Turtle Vomeronasal Receptor Neurons
Mutsuo Taniguchi, Makoto Kashiwayanagi, and Kenzo Kurihara

1247 Altered Inhibition of Dentate Granule Cells during Spatial Learning in an Exploration Task
Edvard I. Moser

1260 Dorsal Spinocerebellar Tract Neurons in the Chronic Intact Cat during Wakefulness and Sleep: Analysis of Spontaneous Spike Activity
Peter J. Soja, Miguel C. Fragoso, Brian E. Cairns, and William-G. Jia

1273 Changes of Synaptic Efficacy in the Medial Geniculate Nucleus as a Result of Auditory Classical Conditioning
Matthew D. McEchron, Edward J. Green, Ray W. Winters, Thomas G. Nolen, Neil Schneiderman, and Philip M. McCabe

NUMBER 4, FEBRUARY 1996

1285 Antagonists of Cyclic Nucleotide-Gated Channels and Molecular Mapping of their Site of Action
Richard H. Kramer and Gareth R. Tibbs

1294 Sequential Expression of Trks A, B, and C in the Regenerating Olfactory Neuroepithelium
A. Jane I. Roskams, M. Angelyn Bethel, K. Joseph Hurt, and Gabriele V. Ronnett

1308 Potent Human p140-TrkA Agonists Derived from an Anti-Receptor Monoclonal Antibody
Lynne LeSauteur, Sergei Maliartchouk, Hélène Le Jeune, Remi Quirion, and H. Uri Saragovi

1317 G_i-Mediated Stimulation of Type II Adenylyl Cyclase Is Augmented by G_q-Coupled Receptor Activation and Phorbol Ester Treatment
Rachel C. Tsu and Yung H. Wong

1324 Superoxide Production in Rat Hippocampal Neurons: Selective Imaging with Hydroethidine
Vytautas P. Bindokas, Joaquín Jordán, Chong C. Lee, and Richard J. Miller

1337 Loss of the p53 Tumor Suppressor Gene Protects Neurons from Kainate-Induced Cell Death
Richard S. Morrison, H. Jurgen Wenzel, Yoshito Kinoshita, Carol A. Robbins, Larry A. Donehower, and Philip A. Schwartzkroin

1346 Localization and Active Transport of mRNA in Axons of Sympathetic Neurons in Culture
Marguerite Olink-Coux and Peter J. Hollenbeck

1359 Calcium Dependence of Large Dense-Cored Vesicle Exocytosis Evoked by Calcium Influx in Bovine Adrenal Chromaffin Cells
Kathrin L. Engisch and Martha C. Nowycky

1370 Ba^{2+} Ions Evoke Two Kinetically Distinct Patterns of Exocytosis in Chromaffin Cells, but Not in Neurohypophysial Nerve Terminals
Elizabeth P. Seward, Natalya I. Chernevskaya, and Martha C. Nowycky

1380 PSD-95 Is Associated with the Postsynaptic Density and Not with the Presynaptic Membrane at Forebrain Synapses
Carol A. Hunt, Leslie J. Schenker, and Mary B. Kennedy

1389 Nitric Oxide and Carbon Monoxide Activate Locus Coeruleus Neurons through a cGMP-Dependent Protein Kinase: Involvement of a Nonselective Cationic Channel
Joseba Pineda, Jeffrey H. Kogan, and George K. Aghajanian

1400 Cortical Plaque-Like Structures Identify Ribosome-Containing Domains in the Mauthner Cell Axon
Edward Koenig and Rainer Martin

1412 *Xenopus* Spinal Neurons Express Kv2 Potassium Channel Transcripts during Embryonic Development
Corinna Burger and Angeles B. Ribera

1422 Neuropeptide Y_1 Receptors Inhibit N-Type Calcium Currents and Reduce Transient Calcium Increases in Rat Dentate Granule Cells
A. Rory McQuiston, Jeffrey J. Petrozzino, John A. Connor, and William F. Colmers

1430 Development of the Pattern of Photoreceptors in the Chick Retina
Suzanne L. Bruhn and Constance L. Cepko

1440 Glutamate Receptors Mediate Dynamic Regulation of Nitric Oxide Synthase Expression in Cerebellar Granule Cells
Stephan L. Baader and Karl Schilling

1450 Dynamics of Target Recognition by Interstitial Axon Branching along Developing Cortical Axons
Martin Bastmeyer and Dennis D. M. O'Leary

1460 NMDA Receptor Activation-Responsive Phosphoproteins in the Developing Optic Tectum
Alfred J. Scheetz and Martha Constantine-Paton

1470 Association of β1 Integrin with Phosphotyrosine in Growth Cone Filopodia
Da-Yu Wu, Li-Chong Wang, Carol A. Mason, and Daniel J. Goldberg

1479 Opioid Desensitization: Interactions with G-Protein-Coupled Receptors in the Locus Coeruleus
Christopher D. Fiorillo and John T. Williams

1486 A Computational Analysis of the Relationship between Neuronal and Behavioral Responses to Visual Motion
Michael N. Shadlen, Kenneth H. Britten, William T. Newsome, and J. Anthony Movshon

1511 Defects in Courtship and Vision Caused by Amino Acid Substitutions in a Putative RNA-Binding Protein Encoded by the *no-on-transient A* (*nonA*) Gene of *Drosophila*
Katherine G. Rendahl, Natasha Gaukhshteyn, David A. Wheeler, Thomas A. Fry, and Jeffrey C. Hall

1523 Histaminergic Descending Inputs to the Mesopontine Tegmentum and their Role in the Control of Cortical Activation and Wakefulness in the Cat
Jian-Sheng Lin, Yiping Hou, Kazuya Sakai, and Michel Jouvet

1538 Context-Specific Multi-Site Cingulate Cortical, Limbic Thalamic, and Hippocampal Neuronal Activity during Concurrent Discriminative Approach and Avoidance Training in Rabbits
John H. Freeman, Jr., Cyndi Cuppernell, Karen Flannery, and Michael Gabriel

1550 Repeated Cocaine Augments Excitatory Amino Acid Transmission in the Nucleus Accumbens Only in Rats Having Developed Behavioral Sensitization
R. Christopher Pierce, Ken Bell, Patricia Duffy, and Peter W. Kalivas

1561 Behavioral Effects Mediated by the Modulatory Glycine Site of the NMDA Receptor in the Anterodorsal Striatum and Nucleus Accumbens
Beate D. Kretschmer and Werner J. Schmidt

1570 Coarticulation of Jaw Movements in Speech Production: Is Context Sensitivity in Speech Kinematics Centrally Planned?
David J. Ostry, Paul L. Gribble, and Vincent L. Gracco

NUMBER 5, MARCH 1996

1581 Tyrosine Phosphorylation of the Kv1.3 Potassium Channel
Todd C. Holmes, Debra A. Fadool, and Irwin B. Levitan

1591 Psychostimulants Depress Excitatory Synaptic Transmission in the Nucleus Accumbens via Presynaptic D1-Like Dopamine Receptors
Saleem M. Nicola, Samuel B. Kombian, and Robert C. Malenka

1605 Mechanisms for the Maintenance and Eventual Degradation of Neurofilament Proteins in the Distal Segments of Severed Goldfish Mauthner Axons
Tim D. Raabe, Tri Nguyen, Cullen Archer, and George D. Bittner

1614 Nitric Oxide and Peptide Neurohormones Activate cGMP Synthesis in the Crab Stomatogastric Nervous System
Nathaniel L. Scholz, Michael F. Goy, James W. Truman, and Katherine Graubard

1623 Contributions of Calcium-Dependent and Calcium-Independent Mechanisms to Presynaptic Inhibition at a Cerebellar Synapse
Jeremy S. Dittman and Wade G. Regehr

1634 Delayed Clearance of Transmitter and the Role of Glutamate Transporters at Synapses with Multiple Release Sites
Thomas S. Otis, Yuh-Cherng Wu, and Laurence O. Trussell

1645 Insulin Receptor in *Aplysia* Neurons: Characterization, Molecular Cloning, and Modulation of Ion Currents
Elizabeth A. Jonas, Ronald J. Knox, Leonard K. Kaczmarek, James H. Schwartz, and David H. Solomon

1659 Capsaicin Activates a Nonselective Cation Channel in Cultured Neonatal Rat Dorsal Root Ganglion Neurons
Uhtaek Oh, Sun Wook Hwang, and Donghee Kim

1668 Characterization of an M-Like Current Modulated by Thyrotropin-Releasing Hormone in Normal Rat Lactotrophs
Sethuraman Sankaranarayanan and Steven M. Simasko

1679 Retinal Degeneration in Transgenic Mice with Photoreceptor-Specific Expression of a Dominant-Negative Fibroblast Growth Factor Receptor
Peter A. Campochiaro, Michelle Chang, Masahiko Ohsato, Stanley A. Vinores, Zuquin Nie, Leonard Hjelmeland, Alka Mansukhani, Claudio Basilico, and Donald J. Zack

1689 Lobster *shal*: Comparison with *Drosophila shal* and Native Potassium Currents in Identified Neurons
Deborah J. Baro, Lisa M. Coniglio, Cathy L. Cole, Hilda E. Rodriguez, Julie K. Lubell, Marshall T. Kim, and Ronald M. Harris-Warrick

1702 The Nitric Oxide/cGMP Pathway Couples Muscarinic Receptors to the Activation of Ca^{2+} Influx
Chris Mathes and Stuart H. Thompson

1710 DNA Damage and Apoptosis in Alzheimer's Disease: Colocalization with c-Jun Immunoreactivity, Relationship to Brain Area, and Effect of Postmortem Delay
Aileen J. Anderson, Joseph H. Su, and Carl W. Cotman

1720 Effects of Denervation on Acetylcholine Receptor Clusters on Frog Cardiac Ganglion Neurons as Revealed by Quantitative Laser Scanning Confocal Microscopy
Hadley L. Wilson Horch and Peter B. Sargent

1730 Clustered Voltage-Gated Na^+ Channels in *Aplysia* Axons
Wendy L. Johnston, John R. Dyer, Vincent F. Castellucci, and Robert J. Dunn

1740 Expression of TrkB Receptor Isoforms in the Developing Avian Visual System
Andrew S. Garner, Harry J. Menegay, Kristen L. Boeshore, Xiao-Yi Xie, James M. Voci, James E. Johnson, and Thomas H. Large

1753 Apoptosis of *bcl-x*-Deficient Telencephalic Cells *In Vitro*
Kevin A. Roth, Noboru Motoyama, and Dennis Y. Loh

1759 The Effects of Growth Factors on the Survival and Differentiation of Cultured Dentate Gyrus Neurons
Daniel H. Lowenstein and Lynn Arsenault

1770 CEPU-1, a Novel Immunoglobulin Superfamily Molecule, Is Expressed by Developing Cerebellar Purkinje Cells
Frank Spaltmann and Thomas Brümmendorf

1780 Synaptic Remodeling Revealed by Repeated *In Vivo* Observations and Electron Microscopy of Identified Frog Neuromuscular Junctions
Chien-Ping Ko and Lanlin Chen

1791 An Adult-Like Pattern of Ocular Dominance Columns in Striate Cortex of Newborn Monkeys prior to Visual Experience
Jonathan C. Horton and Davina R. Hocking

1808 GABA Stimulates Chemotaxis and Chemokinesis of Embryonic Cortical Neurons via Calcium-Dependent Mechanisms
Toby N. Behar, Yong-Xin Li, Hung T. Tran, Wu Ma, Veronica Dunlap, Catherine Scott, and Jeffery L. Barker

1819 Cell Death in the Midbrain of the Murine Mutation *weaver*
Suzanne Roffler-Tarlov, Baby Martin, Ann M. Graybiel, and John S. Kauer

1827 Tissue-Specific Expression of a Ca^{2+}-Activated Channel Is Controlled by Multiple Upstream Regulatory Elements
Robert Brenner, Tarita O. Thomas, Marie N. Becker, and Nigel S. Atkinson

1836 Developmental Influence of Glycinergic Transmission: Regulation of NMDA Receptor-Mediated EPSPs
Vibhakar C. Kotak and Dan H. Sanes

1844 Adrenergic Agents Inhibit Rapid Increases in Cerebellar Purkinje Cell Glutamic Acid Decarboxylase (GAD_{67}) mRNA Levels after Climbing Fiber Lesions or Reserpine Treatment
Susan M. Drengler, Joan F. Lorden, Michael S. Billitz, and Gary A. Oltmans

1852 Fine Grain of the Neural Representation of Human Spatial Vision
Harvey S. Smallman, Donald I. A. MacLeod, Sheng He, and Robert W. Kentridge

1860 The Effects of Ovariectomy and Estrogen Replacement on trkA and Choline Acetyltransferase mRNA Expression in the Basal Forebrain of the Adult Female Sprague–Dawley Rat
Pamela J. McMillan, Cherie A. Singer, and Daniel M. Dorsa

1866 The Inhibitory Effect of Testosterone on Hypothalamic–Pituitary–Adrenal Responses to Stress Is Mediated by the Medial Preoptic Area
Victor Viau and Michael J. Meaney

1877 Basal Amygdaloid Complex Afferents to the Rat Nucleus Accumbens Are Compartmentally Organized
Christopher I. Wright, Arno V. J. Beijer, and Henk J. Groenewegen

1894 Selective Expression of the Immediate Early Gene c-*jun* in Axotomized Rat Medial Septal Neurons Is Not Related to Neuronal Degeneration
Carola A. Haas, Thomas Deller, Thomas Naumann, and Michael Frotscher

1904 Electrophysiological and Morphological Properties of Layer V–VI Principal Pyramidal Cells in Rat Prefrontal Cortex *In Vitro*
Charles R. Yang, Jeremy K. Seamans, and Natalia Gorelova

1922 Dopamine D1 Receptor Actions in Layer V–VI Rat Prefrontal Cortex Neurons *In Vitro*: Modulation of Dendritic–Somatic Signal Integration
Charles R. Yang and Jeremy K. Seamans

1936 A Framework for Mesencephalic Dopamine Systems Based on Predictive Hebbian Learning
P. Read Montague, Peter Dayan, and Terrence J. Sejnowski

1948 Intraseptal Procaine Abolishes Hypothalamic Stimulation-Induced Wheel-Running and Hippocampal Theta Field Activity in Rats
Scott D. Oddie, Wendy Stefanek, Ian J. Kirk, and Brian H. Bland

1957 Relapse to Heroin-Seeking in Rats under Opioid Maintenance: The Effects of Stress, Heroin Priming, and Withdrawal
Yavin Shaham, Heshmat Rajabi, and Jane Stewart

NUMBER 6, MARCH 1996

1965 Phosphorylation of Brain Sodium Channels in the I–II Linker Modulates Channel Function in *Xenopus* Oocytes
Raymond D. Smith and Alan L. Goldin

1975 Localization of Synaptotagmin-Binding Domains on Syntaxin
Yun Kee and Richard H. Scheller

1982 Evidence for Multiple AMPA Receptor Complexes in Hippocampal CA1/CA2 Neurons
Robert J. Wenthold, Ronald S. Petralia, Jaroslav Blahos II, and Andrew S. Niedzielski

1990 G-Protein-Gated Inward Rectifier K^+ Channel Proteins (GIRK1) Are Present in the Soma and Dendrites as well as in Nerve Terminals of Specific Neurons in the Brain
Arturo Ponce, Earl Bueno, Clifford Kentros, Eleazar Vega-Saenz de Miera, Alan Chow, Dean Hillman, Susan Chen, Liangxue Zhu, Michael B. Wu, Xiaying Wu, Bernardo Rudy, and William B. Thornhill

2002 Reduced Nicotinamide Adenine Dinucleotide-Selective Stimulation of Inositol 1,4,5-Trisphosphate Receptors Mediates Hypoxic Mobilization of Calcium
Adam I. Kaplin, Solomon H. Snyder, and David J. Linden

2012 Identification of Gas6 as a Growth Factor for Human Schwann Cells
Rong-hao Li, Jian Chen, Glenn Hammonds, Heidi Phillips, Mark Armanini, Patrick Wood, Richard Bunge, Paul J. Godowski, Mark X. Sliwkowski, and Jennie P. Mather

2020 Decreased Binding of Dopamine D3 Receptors in Limbic Subregions after Neonatal Bilateral Lesion of Rat Hippocampus
Gonzalo Flores, David Barbeau, Rémi Quirion, and Lalit K. Srivastava

2027 Neurogenesis in the Dentate Gyrus of the Adult Rat: Age-Related Decrease of Neuronal Progenitor Proliferation
H. Georg Kuhn, Heather Dickinson-Anson, and Fred H. Gage

2034 NMDA-Dependent Modulation of CA1 Local Circuit Inhibition
Heinz C. R. Grunze, Donald G. Rainnie, Michael E. Hasselmo, Eddie Barkai, Elizabeth F. Hearn, Robert W. McCarley, and Robert W. Greene

2044 Immunocytochemical Localization of Group III Metabotropic Glutamate Receptors in the Hippocampus with Subtype-Specific Antibodies
Stefania Risso Bradley, Allan I. Levey, Steven M. Hersch, and P. Jeffrey Conn

2057 A Different Form of Long-Lasting Potentiation Revealed in Tissue Plasminogen Activator Mutant Mice
Uwe Frey, Michael Müller, and Dietmar Kuhl

2064 Glial Cells Are Increased Proportionally in Transgenic Optic Nerves with Increased Numbers of Axons
Julia F. Burne, Julie K. Staple, and Martin C. Raff

2074 Cellular Localization of Guidance Cues in the Establishment of Retinotectal Topography
Roger W. Davenport, Edda Thies, and Phillip G. Nelson

2086 Ocular Dominance Columns in New World Monkeys
Margaret S. Livingstone

2097 Differential Serotonergic Innervation of the Suprachiasmatic Nucleus and the Intergeniculate Leaflet and its Role in Circadian Rhythm Modulation
Elizabeth L. Meyer-Bernstein and Lawrence P. Morin

2112 Representation of Spatial Orientation by the Intrinsic Dynamics of the Head-Direction Cell Ensemble: A Theory
Kechen Zhang

2127 Selective Clustering of $GABA_A$ and Glycine Receptors in the Mammalian Retina
Peter Koulen, Marco Sassoè-Pognetto, Ulrike Grünert, and Heinz Wässle

2141 Glucocorticoids Differentially Increase Nerve Growth Factor and Basic Fibroblast Growth Factor Expression in the Rat Brain
Italo Mocchetti, Giulio Spiga, Valerie Y. Hayes, Paul J. Isackson, and Annamaria Colangelo

2149 Prepulses Inhibit Startle-Induced Reductions of Extracellular Dopamine in the Nucleus Accumbens of Rat
Trevor Humby, Lawrence S. Wilkinson, Trevor W. Robbins, and Mark A. Geyer

NUMBER 7, APRIL 1996

2157 Interaction between the C Terminus of NMDA Receptor Subunits and Multiple Members of the PSD-95 Family of Membrane-Associated Guanylate Kinases
Martin Niethammer, Eunjoon Kim, and Morgan Sheng

2164 Light and Dark Cause a Shift in the Spatial Expression of a Neuropeptide-Processing Enzyme in the Rat Retina
Cassandra L. Schlamp and Robert W. Nickells

2172 NMDA Receptor Upregulation: Molecular Studies in Cultured Mouse Cortical Neurons after Chronic Antagonist Exposure
Paolo Follesa and Maharaj K. Ticku

2179 Expression of the Putative Vesicular Acetylcholine Transporter in Rat Brain and Localization in Cholinergic Synaptic Vesicles
Michelle L. Gilmor, Norman R. Nash, Ali Roghani, Robert H. Edwards, Hong Yi, Steven M. Hersch, and Allan I. Levey

2191 Glutamate Transporter mRNA Expression in Proliferative Zones of the Developing and Adult Murine CNS
Margaret L. Sutherland, Tracy A. Delaney, and Jeffrey L. Noebels

2208 Context-Dependent Synaptic Action of Glycinergic and GABAergic Inputs in the Dorsal Cochlear Nucleus
Nace L. Golding and Donata Oertel

2220 Membrane Depolarization Induces Calcium-Dependent Secretion of Tissue Plasminogen Activator
Anna Gualandris, Thomas E. Jones, Sidney Strickland, and Stella E. Tsirka

2226 Changes in Action Potential Duration Alter Reliance of Excitatory Synaptic Transmission on Multiple Types of Ca^{2+} Channels in Rat Hippocampus
David B. Wheeler, Andrew Randall, and Richard W. Tsien

2238 DNA Strand Breaks Induced by Sustained Glutamate Excitotoxicity in Primary Neuronal Cultures
Michel Didier, Sherry Bursztajn, Emil Adamec, Lucius Passani, Ralph A. Nixon, Joseph T. Coyle, Jeanne Y. Wei, and Stephen A. Berman

2251 Photopigment Transmittance Imaging of the Primate Photoreceptor Mosaic
Orin S. Packer, David R. Williams, and David G. Bensinger

2261 Retina-Derived POU-Domain Factor-1: A Complex POU-Domain Gene Implicated in the Development of Retinal Ganglion and Amacrine Cells
Hao Zhou, Takashi Yoshioka, and Jeremy Nathans

2275 Brain Cell Type Specificity and Gliosis-Induced Activation of the Human Cytomegalovirus Immediate-Early Promoter in Transgenic Mice
Jean-Marc Fritschy, Sebastian Brandner, Adriano Aguzzi, Marieke Koedood, Bernhard Lüscher, and Pamela J. Mitchell

2283 Role of Neuron–Glial Junctional Domain Proteins in the Maintenance and Termination of Neuronal Migration across the Embryonic Cerebral Wall
Eva S. Anton, Richard S. Cameron, and Pasko Rakic

2294 Inhibition of Protein Tyrosine Kinases Impairs Axon Extension in the Embryonic Optic Tract
Terri Worley and Christine Holt

2307 Modulated Expression of Plasminogen Activator System Components in Cultured Cells from Dissociated Mouse Dorsal Root Ganglia
Steven M. Hayden and Nicholas W. Seeds

2318 An Intrinsic Time Limit between Genesis and Death of Individual Neurons in the Developing Retinal Ganglion Cell Layer
Lucia Galli-Resta and Monica Ensini

2325 Nitric Oxide Delays the Death of Trophic Factor-Deprived PC12 Cells and Sympathetic Neurons by a cGMP-Mediated Mechanism
Stephen E. Farinelli, David S. Park, and Lloyd A. Greene

2335 GDNF Slows Loss of Motoneurons but Not Axonal Degeneration or Premature Death of *pmn/pmn* Mice
Y. Sagot, S. A. Tan, J. P. Hammang, P. Aebischer, and A. C. Kato

2342 A Calcitonin Gene-Related Peptide Receptor Antagonist Prevents the Development of Tolerance to Spinal Morphine Analgesia
Daniel P. Ménard, Denise van Rossum, S. Kar, S. St. Pierre, M. Sutak, K. Jhamandas, and Rémi Quirion

2352 Localization and Function of a 5-HT Transporter in Crypt Epithelia of the Gastrointestinal Tract
P. R. Wade, J. Chen, B. Jaffe, I. S. Kassem, R. D. Blakely, and M. D. Gershon

2365 Chronic Antidepressant Administration Increases the Expression of cAMP Response Element Binding Protein (CREB) in Rat Hippocampus
Masashi Nibuya, Eric J. Nestler, and Ronald S. Duman

2373 Chronic Hyponatremia Reduces Survival of Magnocellular Vasopressin and Oxytocin Neurons after Axonal Injury
Janos Dohanics, Gloria E. Hoffman, and Joseph G. Verbalis

2381 Stimulus-Dependent Synchronization of Neuronal Responses in the Visual Cortex of the Awake Macaque Monkey
Andreas K. Kreiter and Wolf Singer

2397 The Origins of Two-State Spontaneous Membrane Potential Fluctuations of Neostriatal Spiny Neurons
Charles J. Wilson and Yasuo Kawaguchi

2411 D_1 Dopamine Receptor Activation Is Necessary for the Induction of Sensitization by Amphetamine in the Ventral Tegmental Area
Paul Vezina

NUMBER 8, APRIL 1996

2421 Inwardly Rectifying K^+ Channels that May Participate in K^+ Buffering Are Localized in Microvilli of Schwann Cells
Huaiyu Mi, Thomas J. Deerinck, Maggie Jones, Mark H. Ellisman, and Thomas L. Schwarz

2430 β Subunit Coexpression and the α_1 Subunit Domain I–II Linker Affect Piperidine Block of Neuronal Calcium Channels
Gerald W. Zamponi, Tuck W. Soong, Emmanuel Bourinet, and Terry P. Snutch

2444 Protein Synthesis-Dependent Formation of Protein Kinase Mζ in Long-Term Potentiation
Pavel Osten, Lengko Valsamis, Alexander Harris, and Todd Charlton Sacktor

2452 Myelin Basic Protein Gene Expression in Neurons: Developmental and Regional Changes in Protein Targeting within Neuronal Nuclei, Cell Bodies, and Processes
Charles F. Landry, Julie A. Ellison, Thomas M. Pribyl, Celia Campagnoni, Kathy Kampf, and Anthony T. Campagnoni

2463 *Narp*, a Novel Member of the Pentraxin Family, Promotes Neurite Outgrowth and Is Dynamically Regulated by Neuronal Activity
Cynthia C. Tsui, Neal G. Copeland, Debra J. Gilbert, Nancy A. Jenkins, Carol Barnes, and Paul F. Worley

2479 Resistance to Neurotoxicity in Cortical Cultures from Neuronal Nitric Oxide Synthase-Deficient Mice
Valina L. Dawson, Victor M. Kizushi, Paul L. Huang, Solomon H. Snyder, and Ted M. Dawson

2488 CASK: A Novel *dlg*/PSD95 Homolog with an N-Terminal Calmodulin-Dependent Protein Kinase Domain Identified by Interaction with Neurexins
Yutaka Hata, Stefan Butz, and Thomas C. Südhof

2495 Cloning of $P2X_5$ and $P2X_6$ Receptors and the Distribution and Properties of an Extended Family of ATP-Gated Ion Channels
Ginetta Collo, R. Alan North, Eric Kawashima, Emilio Merlo-Pich, Sybille Neidhart, Annmarie Surprenant, and Gary Buell

2508 Brain Microglia/Macrophages Express Neurotrophins that Selectively Regulate Microglial Proliferation and Function
Stella Elkabes, Emanuel M. DiCicco-Bloom, and Ira B. Black

2522 Inhibition of the Kv4 (*Shal*) Family of Transient K^+ Currents by Arachidonic Acid
Alvaro Villarroel and Thomas L. Schwarz
(Reprinted because of a printing error in Vol. 16, No. 3.)

2532 Whole-Cell Chloride Currents in Rat Astrocytes Accompany Changes in Cell Morphology
Christopher D. Lascola and Richard P. Kraig

2546 Extracellular Human Immunodeficiency Virus Type 1 Tat Protein Promotes Aggregation and Adhesion of Cerebellar Neurons
Michael J. Orsini, Christine M. Debouck, Christine L. Webb, and Paul G. Lysko

2553 Astrocytes Protect Neurons from Hydrogen Peroxide Toxicity
Solange Desagher, Jacques Glowinski, and Joël Premont

2563 Role of Glutamic Acid Decarboxylase in the Prepubertal Inhibition of the Luteinizing Hormone Releasing Hormone Release in Female Rhesus Monkeys
Dai Mitsushima, Farshid Marzban, Laure L. Luchansky, Andrew J. Burich, Kim L. Keen, Maureen Durning, Thaddeus G. Golos, and Ei Terasawa

2574 Acetylcholine-Induced Potassium Current of Guinea Pig Outer Hair Cells: Its Dependence on a Calcium Influx through Nicotinic-Like Receptors
Christophe Blanchet, Carlos Eróstegui, Masashi Sugasawa, and Didier Dulon

2585 Action Potential Initiation Site Depends on Neuronal Excitation
Rosemary Melinek and Kenneth J. Muller

2592 Muscarinic (m2/m4) Receptors Reduce N- and P-Type Ca^{2+} Currents in Rat Neostriatal Cholinergic Interneurons through a Fast, Membrane-Delimited, G-Protein Pathway
Zhen Yan and D. James Surmeier

2605 The Pharmacology of Mesolimbic Dopamine Neurons: A Dual-Probe Microdialysis Study in the Ventral Tegmental Area and Nucleus Accumbens of the Rat Brain
B. H. C. Westerink, H.-F. Kwint, and J. B. deVries

2612 Inhibition of Calcium Channels in Rat Central and Peripheral Neurons by ω-Conotoxin MVIIC
Stefan I. McDonough, Kenton J. Swartz, Isabelle M. Mintz, Linda M. Boland, and Bruce P. Bean

2624 mCD24, a Glycoprotein Transiently Expressed by Neurons, Is an Inhibitor of Neurite Outgrowth
Derryck Shewan, Viviane Calaora, Peter Nielsen, James Cohen, Geneviève Rougon, and Hervé Moreau

2635 Expanded CNS Myelin Sheaths Formed *In Situ* in the Presence of an IgM Antigalactocerebroside-Producing Hybridoma
Jack Rosenbluth, Wei-Lan Liang, Zhiguang Liu, Danzhu Guo, and Rolf Schiff

2642 Arrest of Afferent Axon Extension by Target Neurons *In Vitro* Is Regulated by the NMDA Receptor
Douglas H. Baird, Ekkhart Trenkner, and Carol A. Mason

2649 *In Vivo* Growth Factor Expansion of Endogenous Subependymal Neural Precursor Cell Populations in the Adult Mouse Brain
Constance G. Craig, Vince Tropepe, Cindi M. Morshead, Brent A. Reynolds, Samuel Weiss, and Derek van der Kooy

2659 Oligodendrocyte Progenitor Cell Proliferation and Lineage Progression Are Regulated by Glutamate Receptor-Mediated K^+ Channel Block
Vittorio Gallo, Jia Min Zhou, Chris J. McBain, Paul Wright, Peter L. Knutson, and Regina C. Armstrong

2671 Dual Somatotopical Representations in the Primate Subthalamic Nucleus: Evidence for Ordered but Reversed Body-Map Transformations from the Primary Motor Cortex and the Supplementary Motor Area
Atsushi Nambu, Masahiko Takada, Masahiko Inase, and Hironobu Tokuno

2684 Effects of Chronic Morphine Administration on μ Opioid Receptor-Stimulated [^{35}S]GTPγS Autoradiography in Rat Brain
Laura J. Sim, Dana E. Selley, Steven I. Dworkin, and Steven R. Childers

2693 Complexity Affects Regional Cerebral Blood Flow Change during Sequential Finger Movements
Norihiro Sadato, Gregory Campbell, Vicente Ibáñez, Marie-Pierre Deiber, and Mark Hallett

2701 Physiological and Morphological Identification of Somatostatin- or Vasoactive Intestinal Polypeptide-Containing Cells among GABAergic Cell Subtypes in Rat Frontal Cortex
Yasuo Kawaguchi and Yoshiyuki Kubota

2716 Peripheral Cell Types Contributing to the Hyperalgesic Action of Nerve Growth Factor in Inflammation
Clifford J. Woolf, Qing-Ping Ma, Andrew Allchorne, and Stephen Poole

2724 Contributions of Individual Layer 6 Pyramidal Neurons to Local Circuitry in Macaque Primary Visual Cortex
Anne K. Wiser and Edward M. Callaway

2740 Intrinsic Optical Signals in Rat Neocortical Slices Measured with Near-Infrared Dark-Field Microscopy Reveal Changes in Extracellular Space
Knut Holthoff and Otto W. Witte

2750 Abnormal Tactile Experience Early in Life Disrupts Active Touch
George E. Carvell and Daniel J. Simons

2758 Spinal Amino Acid Release and Precipitated Withdrawal in Rats Chronically Infused with Spinal Morphine
K. H. Jhamandas, M. Marsala, T. Ibuki, and T. L. Yaksh

2767 Spatiotemporal Properties of Short-Term Plasticity in Sensorimotor Thalamocortical Pathways of the Rat
Manuel A. Castro-Alamancos and Barry W. Connors

2780 The Hippocampus and Long-Term Object Memory in the Rat
Norbert Vnek and Lawrence A. Rothblat

2788 Synchronization of Fast (30–40 Hz) Spontaneous Oscillations in Intrathalamic and Thalamocortical Networks
Mircea Steriade, Diego Contreras, Florin Amzica, and Igor Timofeev

2809 Hippocampal and Neocortical Cell Assemblies Encode Memory Processes for Different Types of Stimuli in the Rat
Yoshio Sakurai

2820 Microdialysis Perfusion of 8-Hydroxy-2-(Di-*n*-Propylamino)Tetralin (8-OH-DPAT) in the Dorsal Raphe Nucleus Decreases Serotonin Release and Increases Rapid Eye Movement Sleep in the Freely Moving Cat
Chiara M. Portas, Mahesh Thakkar, Donald Rainnie, and Robert W. McCarley

2829 Impaired Classical Eyeblink Conditioning in Cerebellar-Lesioned and Purkinje Cell Degeneration (*pcd*) Mutant Mice
Lu Chen, Shaowen Bao, Jon M. Lockard, Jeansok J. Kim, and Richard F. Thompson

2839 Tests of the Motor Neuron Model of the Local Pattern-Generating Circuits in the Swimmeret System
Carolyn M. Sherff and Brian Mulloney

2860 Opposing Actions of Androgen and Estrogen on *In Vitro* Firing Frequency of Neuronal Oscillators in the Electromotor System
Joseph E. Schaefer and Harold H. Zakon

NUMBER 9, MAY 1996

2869 Structure and Pharmacological Properties of a Molluscan Glutamate-Gated Cation Channel and its Likely Role in Feeding Behavior
Thorsten Stühmer, Muriel Amar, Robert J. Harvey, Isabel Bermudez, Jan van Minnen, and Mark G. Darlison

2881 Inhibition of cGMP Breakdown Promotes the Induction of Cerebellar Long-Term Depression
Nick A. Hartell

2891 Inositol 1,4,5-Trisphosphate-Gated Calcium Transport through Plasma Membranes in Nerve Terminals
Hiroshi Ueda, Shigeki Tamura, Nobuyuki Fukushima, Toshiaki Katada,, Michio Ui, and Masamichi Satoh

2901 Differential Expression of the p75 Nerve Growth Factor Receptor in Glia and Neurons of the Rat Dorsal Root Ganglia after Peripheral Nerve Transection
Xin-Fu Zhou, Robert A. Rush, and Elspeth M. McLachlan

2912 Upregulation of $GABA_A$ Current by Astrocytes in Cultured Embryonic Rat Hippocampal Neurons
Qi-Ying Liu, Anne E. Schaffner, Yong-Xin Li, Veronica Dunlap, and Jeffery L. Barker

2924 INDO-1 Measurements of Absolute Resting and Light-Induced Ca^{2+} Concentration in *Drosophila* Photoreceptors
Roger C. Hardie

2934 Glutamate Responses of Bipolar Cells in a Slice Preparation of the Rat Retina
Thomas Euler, Horst Schneider, and Heinz Wässle

2945 Attenuation of Astroglial Reactivity by Interleukin-10
Vijayabalan Balasingam and Voon Wee Yong

2956 Regulation of α_7 Nicotinic Acetylcholine Receptors in the Developing Rat Somatosensory Cortex by Thalamocortical Afferents
Ron S. Broide, Richard T. Robertson, and Frances M. Leslie

2972 The Divergent Homeobox Gene *PBX1* Is Expressed in the Postnatal Subventricular Zone and Interneurons of the Olfactory Bulb
Lori Redmond, Susan Hockfield, and Maria A. Morabito

2983 The Dynamics of Dendritic Structure in Developing Hippocampal Slices
Michael E. Dailey and Stephen J. Smith

2995 Retrograde Transport of Neurotrophins from the Eye to the Brain in Chick Embryos: Roles of the $p75^{NTR}$ and trkB Receptors
Christopher S. von Bartheld, Reg Williams, Frances Lefcort, Douglas O. Clary, Louis F. Reichardt, and Mark Bothwell

3009 Whole-Cell Patch-Clamp Recording Reveals Subthreshold Sound-Evoked Postsynaptic Currents in the Inferior Colliculus of Awake Bats
Ellen Covey, Julie A. Kauer, and John H. Casseday

3019 Chronic 3-Nitropropionic Acid Treatment in Baboons Replicates the Cognitive and Motor Deficits of Huntington's Disease
Stéphane Palfi, Robert J. Ferrante, Emmanuel Brouillet, M. Flint Beal, Robert Dolan, Marie Caroline Guyot, Marc Peschanski, and Philippe Hantraye

3026 Possible Role of Protein Kinase C in the Sensitization of Primate Spinothalamic Tract Neurons
Qing Lin, Yuan Bo Peng, and William D. Willis

3035 Hormonal Regulation of CREB Phosphorylation in the Anteroventral Periventricular Nucleus
Guibao Gu, Anthony A. Rojo, Michele C. Zee, Jianhua Yu, and Richard B. Simerly

3045 Immunological Instability of Persistent Adenovirus Vectors in the Brain: Peripheral Exposure to Vector Leads to Renewed Inflammation, Reduced Gene Expression, and Demyelination
Andrew P. Byrnes, Robert E. MacLaren, and Harry M. Charlton

3056 High-Frequency Oscillations in the Output Networks of the Hippocampal–Entorhinal Axis of the Freely Behaving Rat
James J. Chrobak and Gyorgy Buzsáki

3067 Evolution of Directional Preferences in the Supplementary Eye Field during Acquisition of Conditional Oculomotor Associations
Longtang L. Chen and Steven P. Wise

3082 Covert Orienting of Attention in the Rat and the Role of Striatal Dopamine
Nick M. Ward and Verity J. Brown

3089 Conditioned and Unconditioned Stimuli Increase Frontal Cortical and Hippocampal Acetylcholine Release: Effects of Novelty, Habituation, and Fear
Elio Acquas, Catriona Wilson, and Hans C. Fibiger

3097 Somatostatin in the Pontine Reticular Formation Modulates Fear Potentiation of the Acoustic Startle Response: An Anatomical, Electrophysiological, and Behavioral Study
Markus Fendt, Michael Koch, and Hans-Ulrich Schnitzler

3104 Mouse Model of Hyperkinesis Implicates SNAP-25 in Behavioral Regulation
Ellen J. Hess, Katherine A. Collins, Michael C. Wilson

3112 Rewarding Actions of Phencyclidine and Related Drugs in Nucleus Accumbens Shell and Frontal Cortex
William A. Carlezon, Jr., and Roy A. Wise

NUMBER 10, MAY 1996

3123 Naturally Occurring Truncated trkB Receptors Have Dominant Inhibitory Effects on Brain-Derived Neurotrophic Factor Signaling
Fernette F. Eide, Ella R. Vining, Brock L. Eide, Keling Zang, Xiao-Yun Wang, and Louis F. Reichardt

3130 cGMP-Dependent Protein Kinase in Dorsal Root Ganglion: Relationship with Nitric Oxide Synthase and Nociceptive Neurons
Yifang Qian, Daniel S. Chao, Daniel R. Santillano, Trudy L. Cornwell, Angus C. Nairn, Paul Greengard, Thomas M. Lincoln, and David S. Bredt

3139 Study of Receptor-Mediated Neurotoxins Released by HIV-1-Infected Mononuclear Phagocytes Found in Human Brain
Dana Giulian, Jiahan Yu, Xia Li, Donald Tom, Jun Li, Elaine Wendt, Shen-Nan Lin, Robert Schwarcz, and Christine Noonan

3154 Invertebrate Synapsins: A Single Gene Codes for Several Isoforms in *Drosophila*
Bert R. E. Klagges, Gertrud Heimbeck, Tanja A. Godenschwege, Alois Hofbauer, Gert O. Pflugfelder, Rita Reifegerste, Dietmar Reisch, Michael Schaupp, Sigrid Buchner, and Erich Buchner

3166 Clustering of Gephyrin at GABAergic but Not Glutamatergic Synapses in Cultured Rat Hippocampal Neurons
Ann Marie Craig, Gary Banker, Weiru Chang, Maureen E. McGrath, and Anna S. Serpinskaya

3178 Selective, Activity-Dependent Uptake of Histamine into an Arthropod Photoreceptor
Ann E. Stuart, Jennifer R. Morgan, Harold E. Mekeel, Elizabeth Kempter, and Joseph C. Callaway

3189 A Macromolecular Synthesis-Dependent Late Phase of Long-Term Potentiation Requiring cAMP in the Medial Perforant Pathway of Rat Hippocampal Slices
Peter V. Nguyen and Eric R. Kandel

3199 Restoration of Normal Conduction Properties in Demyelinated Spinal Cord Axons in the Adult Rat by Transplantation of Exogenous Schwann Cells
Osamu Honmou, Paul A. Felts, Stephen G. Waxman, and Jeffery D. Kocsis

3209 Frequency and Dendritic Distribution of Autapses Established by Layer 5 Pyramidal Neurons in the Developing Rat Neocortex: Comparison with Synaptic Innervation of Adjacent Neurons of the Same Class
Joachim Lübke, Henry Markram, Michael Frotscher, and Bert Sakmann

3219 The Ganglionic Eminence May Be an Intermediate Target for Corticofugal and Thalamocortical Axons
Christine Métin and Pierre Godement

3236 Microtubule Stability Decreases Axon Elongation but Not Axoplasm Production
M. William Rochlin, Karen M. Wickline, and Paul C. Bridgman

3247 Influences of the Thalamus on the Survival of Subplate and Cortical Plate Cells in Cultured Embryonic Mouse Brain
David J. Price and R. Beau Lotto

3256 Synaptic Modulation by Neurotrophic Factors: Differential and Synergistic Effects of Brain-Derived Neurotrophic Factor and Ciliary Neurotrophic Factor
Ron Stoop and Mu-ming Poo

3265 Transgenic Expression of Embryonic MAP2 in Adult Mouse Brain: Implications for Neuronal Polarization
Kathryn M. Marsden, Thierry Doll, Jacqueline Ferralli, Florence Botteri, and Andrew Matus

3274 Experience-Dependent Plasticity of Binocular Responses in the Primary Visual Cortex of the Mouse
Joshua A. Gordon and Michael P. Stryker

3287 Temporal Regulation of *Shaker*- and *Shab*-Like Potassium Channel Gene Expression in Single Embryonic Spinal Neurons during K^+ Current Development
Devorah Gurantz, Angeles B. Ribera, and Nicholas C. Spitzer

3296 BEN As a Presumptive Target Recognition Molecule during the Development of the Olivocerebellar System
Alain Chédotal, Olivier Pourquié, Frédéric Ezan, Hélène San Clemente, and Constantino Sotelo

3311 Contingent Vulnerability of Entorhinal Parvalbumin-Containing Neurons in Alzheimer's Disease
Ana Solodkin, Stacy D. Veldhuizen, and Gary W. Van Hoesen

3322 A Novel Entorhinal Projection to the Rat Dentate Gyrus: Direct Innervation of Proximal Dendrites and Cell Bodies of Granule Cells and GABAergic Neurons
Thomas Deller, Albert Martinez, Robert Nitsch, and Michael Frotscher

3334 Projection Cells and Interneurons of the Lateral and Basolateral Amygdala: Distinct Firing Patterns and Differential Relation to Theta and Delta Rhythms in Conscious Cats
Denis Paré and Hélène Gaudreau

3351 Efficient Coding of Natural Scenes in the Lateral Geniculate Nucleus: Experimental Test of a Computational Theory
Yang Dan, Joseph J. Atick, and R. Clay Reid

3363 AMPA Receptor Subunits Underlying Terminals of Fine-Caliber Primary Afferent Fibers
A. Popratiloff, R. J. Weinberg, and A. Rustioni

3373 Low-Frequency Stimulation Cancels the High-Frequency-Induced Long-Lasting Effects in the Rat Medial Vestibular Nuclei
S. Grassi, V. E. Pettorossi, and M. Zampolini

3381 Blue-Cone Horizontal Cells in the Retinae of Horses and Other *Equidae*
Daniele Sandmann, Brian B. Boycott, and Leo Peichl

3397 Interneurons Containing Calretinin Are Specialized to Control Other Interneurons in the Rat Hippocampus
Attila I. Gulyás, Norbert Hájos, and Tamás F. Freund

3412 Morphological Correlates of Bilateral Synchrony in the Rat Cerebellar Cortex
C. I. De Zeeuw, E. J. Lang, I. Sugihara, T. J. H. Ruigrok, L. M. Eisenman, E. Mugnaini, and R. Llinás

3427 Molecular Indices of Neuronal and Glial Plasticity in the Hippocampal Formation in a Rodent Model of Age-Induced Spatial Learning Impairment
Kiminobu Sugaya, Michael Chouinard, Rhonda Greene, Michael Robbins, David Personett, Caroline Kent, Michela Gallagher, and Michael McKinney

3444 Implementation of Action Sequences by a Neostriatal Site: A Lesion Mapping Study of Grooming Syntax
Howard C. Cromwell and Kent C. Berridge

3459 Phasic Firing of Single Neurons in the Rat Nucleus Accumbens Correlated with the Timing of Intravenous Cocaine Self-Administration
Laura L. Peoples and Mark O. West

3474 Ethanol Self-Administration Restores Withdrawal-Associated Deficiencies in Accumbal Dopamine and 5-Hydroxytryptamine Release in Dependent Rats
Friedbert Weiss, Loren H. Parsons, Gery Schulteis, Petri Hyytiä, Marge T. Lorang, Floyd E. Bloom, and George F. Koob

3486 Altered Habituation of an Identified Escape Circuit in *Drosophila* Memory Mutants
Jeff E. Engel and Chun-Fang Wu

3500 The Echidna *Tachyglossus aculeatus* Combines REM and Non-REM Aspects in a Single Sleep State: Implications for the Evolution of Sleep
J. M. Siegel, P. R. Manger, R. Nienhuis, H. M. Fahringer, and J. D. Pettigrew

3507 The Vesicular Monoamine Transporter, in Contrast to the Dopamine Transporter, Is Not Altered by Chronic Cocaine Self-Administration in the Rat
Julie M. Wilson and Stephen J. Kish

3511 Mesencephalic Substrate of Reward: Axonal Connections
Sandra M. Boye and Pierre-Paul Rompré

3521 Neuropeptide Y Depresses GABA-Mediated Calcium Transients in Developing Suprachiasmatic Nucleus Neurons: A Novel Form of Calcium Long-Term Depression
Karl Obrietan and Anthony N. van den Pol

3534 Chronic Psychosocial Stress Causes Apical Dendritic Atrophy of Hippocampal CA3 Pyramidal Neurons in Subordinate Tree Shrews
Ana María Magariños, Bruce S. McEwen, Gabriele Flügge, and Eberhard Fuchs

3541 Selective Effects of Nerve Growth Factor on Spatial Recent Memory as Assessed by a Delayed Nonmatching-to-Position Task in the Water Maze
Alicja L. Markowska, Donald Price, and Vassilis E. Koliatsos

NUMBER 11, JUNE 1996

3549 Multiple Structural Elements Determine Subunit Specificity of Mg^{2+} Block in NMDA Receptor Channels
Thomas Kuner and Ralf Schoepfer

3559 IRK(1–3) and GIRK(1–4) Inwardly Rectifying K^+ Channel mRNAs Are Differentially Expressed in the Adult Rat Brain
Christine Karschin, Elke Dißmann, Walter Stühmer, and Andreas Karschin

3571 Nucleus-Specific Expression of $GABA_A$ Receptor Subunit mRNAs in Monkey Thalamus
M. M. Huntsman, M. G. Leggio, and E. G. Jones

3590 Predominant Expression of Platelet-Activating Factor Receptor in the Rat Brain Microglia
Mikiro Mori, Makoto Aihara, Kazuhiko Kume, Makoto Hamanoue, Shinichi Kohsaka, and Takao Shimizu

3601 Tau Is Enriched on Dynamic Microtubules in the Distal Region of Growing Axons
Mark M. Black, Theresa Slaughter, Simon Moshiach, Maria Obrocka, and Itzhak Fischer

3620 17β-Estradiol Potentiates Kainate-Induced Currents via Activation of the cAMP Cascade
Qin Gu and Robert L. Moss

3630 Developmental Changes of Inhibitory Synaptic Currents in Cerebellar Granule Neurons: Role of $GABA_A$ Receptor α6 Subunit
Sutthichai Tia, Jin Feng Wang, Naiphinich Kotchabhakdi, and Stefano Vicini

3641 Identification and Characterization of a 47 Base Pair Activity-Dependent Enhancer of the Rat Nicotinic Acetylcholine Receptor δ-Subunit Promoter
Wade Walke, Guozhi Xiao, and Daniel Goldman

3652 Actions of Endogenous Opioids on NMDA Receptor-Independent Long-Term Potentiation in Area CA3 of the Hippocampus
Stephen H. Williams and Daniel Johnston

3661 Identification and Characterization of a Ca^{2+}-Sensitive Nonspecific Cation Channel Underlying Prolonged Repetitive Firing in *Aplysia* Neurons
Gisela F. Wilson, Frank C. Richardson, Thomas E. Fisher, Baldomero M. Olivera, and Leonard K. Kaczmarek

3672 Activation of δ-Opioid Receptors Inhibits Neuronal-Like Calcium Channels and Distal Steps of Ca^{2+}-Dependent Secretion in Human Small-Cell Lung Carcinoma Cells
E. Sher, P. Cesare, A. Codignola, F. Clementi, P. Tarroni, A. Pollo, V. Magnelli, and E. Carbone

3685 A Novel Type of Programmed Neuronal Death in the Cervical Spinal Cord of the Chick Embryo
Hiroyuki Yaginuma, Misako Tomita, Noriko Takashita, Sharen E. McKay, Chareba Cardwell, Qin-Wei Yin, and Ronald W. Oppenheim

3704 Inhibition of the NT-3 Receptor TrkC, Early in Chick Embryogenesis, Results in Severe Reductions in Multiple Neuronal Subpopulations in the Dorsal Root Ganglia
Frances Lefcort, Douglas O. Clary, Anne C. Rusoff, and Louis F. Reichardt

3714 Functional Anatomy of a Prelearned Sequence of Horizontal Saccades in Humans
Laurent Petit, Christophe Orssaud, Nathalie Tzourio, Fabrice Crivello, Alain Berthoz, and Bernard Mazoyer

3727 Dopamine Receptor Agonists Regulate Levels of the Serotonin $5\text{-}HT_{2A}$ Receptor and its mRNA in a Subpopulation of Rat Striatal Neurons
Nathalie Laprade, Fatiha Radja, Tomás A. Reader, and Jean-Jacques Soghomonian

3737 Specific Involvement of Human Parietal Systems and the Amygdala in the Perception of Biological Motion
Eva Bonda, Michael Petrides, David Ostry, and Alan Evans

3745 Endogenous Substance P Mediates Cold Water Stress-Induced Increase in Interleukin-6 Secretion from Peritoneal Macrophages
Goafa F. Zhu, Cheryl Chancellor-Freeland, Ari S. Berman, Reinhard Kage, Susan E. Leeman, David I. Beller, and Paul H. Black

3753 Network Analysis of Positron Emission Tomography Regional Cerebral Blood Flow Data: Ensemble Inhibition during Episodic Memory Retrieval
Lars Nyberg, Anthony R. McIntosh, Roberto Cabeza, Lars-Göran Nilsson, Sylvain Houle, Reza Habib, and Endel Tulving

3760 Metabotropic Glutamate Receptor Activation in Cerebellar Purkinje Cells as Substrate for Adaptive Timing of the Classically Conditioned Eye-Blink Response
John C. Fiala, Stephen Grossberg, and Daniel Bullock

3775 A Primary Acoustic Startle Pathway: Obligatory Role of Cochlear Root Neurons and the Nucleus Reticularis Pontis Caudalis
Younglim Lee, Dolores E. López, Edward G. Meloni, and Michael Davis

NUMBER 12, JUNE 1996

3791 Neural Agrin Activates a High-Affinity Receptor in C2 Muscle Cells that Is Unresponsive to Muscle Agrin
David C. Bowen, Janice Sugiyama, Michael Ferns, and Zach W. Hall

3798 Determinants of Competitive Antagonist Sensitivity on Neuronal Nicotinic Receptor β Subunits
Scott C. Harvey and Charles W. Luetje

3807 [^{3}H]Dihydrorotenone Binding to NADH: Ubiquinone Reductase (Complex I) of the Electron Transport Chain: An Autoradiographic Study
Donald S. Higgins, Jr. and J. Timothy Greenamyre

3817 The Taste of Monosodium Glutamate: Membrane Receptors in Taste Buds
Nirupa Chaudhari, Hui Yang, Cynthia Lamp, Eugene Delay, Claire Cartford, Trang Than, and Stephen Roper

3827 Null Mutation of c-*fos* Impairs Structural and Functional Plasticities in the Kindling Model of Epilepsy
Yoshinori Watanabe, Randall S. Johnson, Linda S. Butler, Devin K. Binder, Bruce M. Spiegelman, Virginia E. Papaioannou, and James O. McNamara

3837 Temporal Representations of Odors in an Olfactory Network
Gilles Laurent, Michael Wehr, and Hananel Davidowitz

3848 Muscarinic Activation of a Voltage-Dependent Cation Nonselective Current in Rat Association Cortex
Samir Haj-Dahmane and Rodrigo Andrade

3862 Layer-Specific Properties of the Transient K Current (I_A) in Piriform Cortex
Matthew I. Banks, Lewis B. Haberly, and Meyer B. Jackson

3877 Homeostasis of Synaptic Transmission in *Drosophila* with Genetically Altered Nerve Terminal Morphology
Bryan A. Stewart, Christoph M. Schuster, Corey S. Goodman, and Harold L. Atwood

3887 Brain-Derived Neurotrophic Factor and Neurotrophin-4/5 Stimulate Growth of Axonal Branches from Regenerating Retinal Ganglion Cells
Hajime Sawai, David B. Clarke, Paula Kittlerova, Garth M. Bray, and Albert J. Aguayo

3895 Nerve Growth Factor (NGF)-Mediated Protection of Neural Crest Cells from Antimitotic Agent-Induced Apoptosis: The Role of the Low-Affinity NGF Receptor
Megan H. Cortazzo, Edmund S. Kassis, Kari A. Sproul, and Nina Felice Schor

3900 Characterization of *Drosophila Tyramine β-Hydroxylase* Gene and Isolation of Mutant Flies Lacking Octopamine
Maria Monastirioti, Charles E. Linn, Jr., and Kalpana White

3912 Synchronous GABA-Mediated Potentials and Epileptiform Discharges in the Rat Limbic System *In Vitro*
Massimo Avoli, Michaela Barbarosie, Anne Lücke, Takeki Nagao, Valeri Lopantsev, and Rüdiger Köhling

3925 Cloning and Functional Characterization of a Novel Dopamine Receptor from *Drosophila melanogaster*
Guoping Feng, Frances Hannan, Vincenzina Reale, Yuen Yi Hon, Christopher T. Kousky, Peter D. Evans, and Linda M. Hall

3934 Biosynthesis of an Endogenous Cannabinoid Precursor in Neurons and its Control by Calcium and cAMP
Hugues Cadas, Sylvie Gaillet, Massimiliano Beltramo, Laurent Venance, and Daniele Piomelli

3943 Maternal Glucocorticoid Secretion Mediates Long-Term Effects of Prenatal Stress
Arnaud Barbazanges, Pier Vincenzo Piazza, Michel Le Moal, and Stefania Maccari

3950 Modulation of a Neural Network by Physiological Levels of Oxygen in Lobster Stomatogastric Ganglion
Jean-Charles Massabuau and Pierre Meyrand

3960 Synaptic Vesicle Movements Monitored by Fluorescence Recovery after Photobleaching in Nerve Terminals Stained with FM1-43
A. W. Henkel, L. L. Simpson, R. M. A. P. Ridge, and W. J. Betz

3968 Visual Stimulation Regulates the Expression of Transcription Factors and Modulates the Composition of AP-1 in Visual Cortex
Bozena Kaminska, Leszek Kaczmarek, and Avi Chaudhuri

3979 Schwann Cell Apoptosis during Normal Development and after Axonal Degeneration Induced by Neurotoxins in the Chick Embryo
Dolors Ciutat, Jordi Calderó, Ronald W. Oppenheim, and Josep E. Esquerda

3991 Expression of NGF and NT3 mRNAs in Hippocampal Interneurons Innervated by the GABAergic Septohippocampal Pathway
Nativitat Rocamora, Marta Pascual, Laszlo Acsàdy, Luís de Lecea, Tamàs F. Freund, and Eduardo Soriano

4005 Analysis of the Globose Basal Cell Compartment in Rat Olfactory Epithelium Using GBC-1, a New Monoclonal Antibody against Globose Basal Cells
Bradley J. Goldstein and James E. Schwob

4017 A Dynamic Network Simulation of the Nematode Tap Withdrawal Circuit: Predictions Concerning Synaptic Function Using Behavioral Criteria
Stephen R. Wicks, Chris J. Roehrig, and Catharine H. Rankin

4032 Functional Mapping of Human Learning: A Positron Emission Tomography Activation Study of Eyeblink Conditioning
Teresa A. Blaxton, Thomas A. Zeffiro, John D. E. Gabrieli, Susan Y. Bookheimer, Maria C. Carrillo, William H. Theodore, and John F. Disterhoft

4041 Systemic NMDA Receptor Antagonist CGP-40116 Does Not Impair Memory Acquisition but Protects against NMDA Neurotoxicity in Rhesus Monkeys
Sergei A. Gutnikov and David Gaffan

NUMBER 13, JULY 1996

4047 Regulation of Neuromodulatory Actions of Angiotensin II in the Brain Neurons by the Ras-Dependent Mitogen-Activated Protein Kinase Pathway
Hong Yang, Di Lu, Kan Yu, and Mohan K. Raizada

4059 Regulation of Dendritic Spine Density in Cultured Rat Hippocampal Neurons by Steroid Hormones
Diane D. Murphy and Menahem Segal

4069 Motor Neurons Are Selectively Vulnerable to AMPA/Kainate Receptor-Mediated Injury *In Vitro*
Sean G. Carriedo, Hong Z. Yin, and John H. Weiss

4080 gp120-Induced Neurotoxicity in Hippocampal Pyramidal Neuron Cultures: Protective Action of TGF-β1
Olimpia Meucci and Richard J. Miller

4089 The Role of K^+ Currents in Frequency-Dependent Spike Broadening in *Aplysia* R20 Neurons: A Dynamic-Clamp Analysis
Minghong Ma and John Koester

4102 Multiple Protein Factors Interact with the *cis*-Regulatory Elements of the Proximal Promoter in a Cell-Specific Manner and Regulate Transcription of the Dopamine β-Hydroxylase Gene
Hyemyung Seo, Chunying Yang, Hee-Sun Kim, and Kwang-Soo Kim

4113 Cholinergic-Dependent Plateau Potential in Hippocampal CA1 Pyramidal Neurons
Douglas D. Fraser and Brian A. MacVicar

4129 Kinetics of NMDA Channel Opening
Jeffrey A. Dzubay and Craig E. Jahr

4135 Ultrastructural Localization of the Vesicular Monoamine Transporter-2 in Midbrain Dopaminergic Neurons: Potential Sites for Somatodendritic Storage and Release of Dopamine
Melissa J. Nirenberg, June Chan, Yongjian Liu, Robert H. Edwards, and Virginia M. Pickel

4146 Increased Expression of IL-1β Converting Enzyme in Hippocampus after Ischemia: Selective Localization in Microglia
Ratan V. Bhat, Richard DiRocco, Val R. Marcy, Dorothy G. Flood, Yuan Zhu, Pawel Dobrzanski, Robert Siman, Richard Scott, Patricia C. Contreras, and Matthew Miller

4155 Multiple Subtypes of Voltage-Gated Calcium Channel Mediate Transmitter Release from Parasympathetic Neurons in the Mouse Bladder
Sally A. Waterman

4162 Ultrastructural Immunocytochemical Localization of μ-Opioid Receptors in Rat Nucleus Accumbens: Extrasynaptic Plasmalemmal Distribution and Association with Leu^5-Enkephalin
Adena L. Svingos, Akiyoshi Moriwaki, Jia Bei Wang, George R. Uhl, and Virginia M. Pickel

4174 TGF-β-Induced Apoptosis of Cerebellar Granule Neurons Is Prevented by Depolarization
Ariane de Luca, Michael Weller, and Adriano Fontana

4186 Protection of Retinal Ganglion Cells from Natural and Axotomy-Induced Cell Death in Neonatal Transgenic Mice Overexpressing bcl-2
Lidia Bonfanti, Enrica Strettoi, Sabrina Chierzi, Maria Cristina Cenni, Xiu-Huai Liu, Jean-Claude Martinou, Lamberto Maffei, and Sylvia A. Rabacchi

4195 Dual Action of a Carbohydrate Epitope on Afferent and Efferent Axons in Cortical Development
Sigrid Henke-Fahle, Fanny Mann, Magdalena Götz, Karen Wild, and Jürgen Bolz

4207 Linear Systems Analysis of Functional Magnetic Resonance Imaging in Human V1
Geoffrey M. Boynton, Stephen A. Engel, Gary H. Glover, and David J. Heeger

4222 Mnemonic Responses of Single Units Recorded from Monkey Inferotemporal Cortex, Accessed via Transcommissural Versus Direct Pathways: A Dissociation between Unit Activity and Behavior
Stanislaw Sobotka and James L. Ringo

4231 Amphetamine and Dopamine-Induced Immediate Early Gene Expression in Striatal Neurons Depends on Postsynaptic NMDA Receptors and Calcium
Christine Konradi, Jean-Christophe Leveque, and Steven E. Hyman

4240 Stimulus Specificity of Phase-Locked and Non-Phase-Locked 40 Hz Visual Responses in Human
Catherine Tallon-Baudry, Olivier Bertrand, Claude Delpuech, and Jacques Pernier

4250 Kainic Acid-Induced Seizures Enhance Dentate Gyrus Inhibition by Downregulation of $GABA_B$ Receptors
Kurt Z. Haas, Ellen F. Sperber, Solomon L. Moshé, and Patric K. Stanton

4261 Three-Dimensional Statistical Analysis of Sulcal Variability in the Human Brain
Paul M. Thompson, Craig Schwartz, Robert T. Lin, Aelia A. Khan, and Arthur W. Toga

4275 Cerebral Representation of One's Own Past: Neural Networks Involved in Autobiographical Memory
Gereon R. Fink, Hans J. Markowitsch, Mechthild Reinkemeier, Thomas Bruckbauer, Josef Kessler, and Wolf-Dieter Heiss

4283 Excitatory Actions of GABA after Neuronal Trauma
Anthony N. van den Pol, Karl Obrietan, and Gong Chen

4293 Induction of Hebbian and Non-Hebbian Mossy Fiber Long-Term Potentiation by Distinct Patterns of High-Frequency Stimulation
Nathaniel N. Urban and German Barrionuevo

4300 Binaural Cross-Correlation Predicts the Responses of Neurons in the Owl's Auditory Space Map under Conditions Simulating Summing Localization
Clifford H. Keller and Terry T. Takahashi

NUMBER 14, JULY 1996

4311 C-erbB2/*neu* Transfection Induces Gap Junctional Communication Incompetence in Glial Cells
Andreas Hofer, Juan C. Sáez, Chia Cheng Chang, James E. Trosko, David C. Spray, and Rolf Dermietzel

4322 Cannabinoid Receptor Agonists Inhibit Glutamatergic Synaptic Transmission in Rat Hippocampal Cultures
Maoxing Shen, Timothy M. Piser, Virginia S. Seybold, and Stanley A. Thayer

4335 Modulation of Conduction Block in Leech Mechanosensory Neurons
Adam Mar and Pierre Drapeau

4344 $[Ca^{2+}]_i$ Elevations Detected by BK Channels during Ca^{2+} Influx and Muscarine-Mediated Release of Ca^{2+} from Intracellular Stores in Rat Chromaffin Cells
Murali Prakriya, Christopher R. Solaro, and Christopher J. Lingle

4360 Structure and Evolution of Neurexophilin
Alexander G. Petrenko, Beate Ullrich, Markus Missler, Valery Krasnoperov, Thomas W. Rosahl, and Thomas C. Südhof

4370 Expression of a Kinesin-Related Motor Protein Induces Sf9 Cells to Form Dendrite-Like Processes with Nonuniform Microtubule Polarity Orientation
David J. Sharp, Ryoko Kuriyama, and Peter W. Baas

4376 Functional Correlation of NMDA Receptor ε Subunits Expression with the Properties of Single-Channel and Synaptic Currents in the Developing Cerebellum
Tomoyuki Takahashi, Dirk Feldmeyer, Norimitsu Suzuki, Kayoko Onodera, Stuart G. Cull-Candy, Kenji Sakimura, and Masayoshi Mishina

4383 Protein Kinase A Activation Increases Sodium Current Magnitude in the Electric Organ of *Sternopygus*
Lynne McAnelly and Harold H. Zakon

4389 The Behavior of Optic Axons on Substrate Gradients of Retinal Basal Lamina Proteins and Merosin
Willi Halfter

4402 Neurotrophin-3 Antibodies Disrupt the Normal Development of the Chick Retina
Paola Bovolenta, José-María Frade, Elisa Martí, María-Angeles Rodríguez-Peña, Yves-Alain Barde, and Alfredo Rodríguez-Tébar

4411 Upregulation of BDNF mRNA Expression in the Barrel Cortex of Adult Mice after Sensory Stimulation
Nativitat Rocamora, Egbert Welker, Marta Pascual, and Eduardo Soriano

4420 The Structure of Spatial Receptive Fields of Neurons in Primary Auditory Cortex of the Cat
John F. Brugge, Richard A. Reale, and Joseph E. Hind

4438 Electrographic Seizures and New Recurrent Excitatory Circuits in the Dentate Gyrus of Hippocampal Slices from Kainate-Treated Epileptic Rats
Jean-Pierre Wuarin and F. Edward Dudek

4449 Double Transduction with GTP Cyclohydrolase I and Tyrosine Hydroxylase Is Necessary for Spontaneous Synthesis of L-DOPA by Primary Fibroblasts
Craig Bencsics, Stephen R. Wachtel, Sheldon Milstien, Kazuyuki Hatakeyama, Jill B. Becker, and Un Jung Kang

4457 Organization of AMPA Receptor Subunits at a Glutamate Synapse: A Quantitative Immunogold Analysis of Hair Cell Synapses in the Rat Organ of Corti
Atsushi Matsubara, Jon H. Laake, Svend Davanger, Shin-ichi Usami, and Ole P. Ottersen

4468 Localization of the Somatostatin Receptor SST_{2A} in Rat Brain Using a Specific Anti-Peptide Antibody
Pascal Dournaud, Yi Z. Gu, Agnes Schonbrunn, Jean Mazella, Gloria S. Tannenbaum, and Alain Beaudet

4479 Immunocytochemical Localization of the $GABA_C$ Receptor ρ Subunits in the Mammalian Retina
Ralf Enz, Johann Helmut Brandstätter, Heinz Wässle, and Joachim Bormann

4491 Profound Loss of Layer II Entorhinal Cortex Neurons Occurs in Very Mild Alzheimer's Disease
Teresa Gómez-Isla, Joseph L. Price, Daniel W. McKeel, Jr., John C. Morris, John H. Growdon, and Bradley T. Hyman

4501 The Effects of Superior Temporal Cortex Lesions on the Processing and Retention of Auditory Information in Monkeys (*Cebus apella*)
Michael Colombo, Hillary R. Rodman, and Charles G. Gross

4518 A Pair of Identified Interneurons in *Aplysia* that Are Involved in Multiple Behaviors Are Necessary and Sufficient for the Arterial-Shortening Component of a Local Withdrawal Reflex
Yuanpei Xin, Klaudiusz R. Weiss, and Irving Kupfermann

4529 Synaptogenesis and FOS Expression in the Motor Cortex of the Adult Rat after Motor Skill Learning
Jeffrey A. Kleim, Erich Lussnig, Edward R. Schwarz, Thomas A. Comery, and William T. Greenough

NUMBER 15, AUGUST 1996

4537 Apical Dendritic Location of Slow Afterhyperpolarization Current in Hippocampal Pyramidal Neurons: Implications for the Integration of Long-Term Potentiation
Pankaj Sah and John M. Bekkers

4543 Phenotypic Alteration of a Human BK (*hSlo*) Channel by *hSlo*β Subunit Coexpression: Changes in Blocker Sensitivity, Activation/Relaxation and Inactivation Kinetics, and Protein Kinase A Modulation
Steven I. Dworetzky, Christopher G. Boissard, Janet T. Lum-Ragan, M. Craig McKay, Debra J. Post-Munson, Joanne T. Trojnacki, Chia-Ping Chang, and Valentin K. Gribkoff

4551 Visual Motion-Detection Circuits in Flies: Parallel Direction- and Non-Direction-Sensitive Pathways between the Medulla and Lobula Plate
John K. Douglass and Nicholas J. Strausfeld

4563 Visual Motion-Detection Circuits in Flies: Small-Field Retinotopic Elements Responding to Motion Are Evolutionarily Conserved across Taxa
Elke K. Buschbeck and Nicholas J. Strausfeld

4579 The Fibroblast Growth Factor Receptor-1 Is Necessary for the Induction of Neurite Outgrowth in PC12 Cells by aFGF
Hsien-Yi Lin, Jingsong Xu, David M. Ornitz, Simon Halegoua, and Michael J. Hayman

4588 Major Histocompatibility Class II Molecules in the CNS: Increased Microglial Expression at the Onset of Narcolepsy in a Canine Model
Mehdi Tafti, Seiji Nishino, Michael S. Aldrich, Wennie Liao, William C. Dement, and Emmanuel Mignot

4596 Involvement of a Phorbol Ester-Insensitive Protein Kinase C in the α_2-Adrenergic Inhibition of Voltage-Gated Calcium Current in Chick Sympathetic Neurons
Stefan Boehm, Sigismund Huck, and Michael Freissmuth

4604 Protection of the Neostriatum against Excitotoxic Damage by Neurotrophin-Producing, Genetically Modified Neural Stem Cells
Alberto Martínez-Serrano and Anders Björklund

4617 Selective G-Protein Regulation of Neuronal Calcium Channels
Peter T. Toth, Lee R. Shekter, Gloria Hui Ma, Louis H. Philipson, and Richard J. Miller

4625 Electrophysiological Characterization of Chemosensory Neurons from the Mouse Vomeronasal Organ
Emily R. Liman and David P. Corey

4638 APPL, the *Drosophila* Member of the APP-Family, Exhibits Differential Trafficking and Processing in CNS Neurons
Laura Torroja, Liqun Luo, and Kalpana White

4651 Functional NMDA Receptors Are Transiently Active and Support the Survival of Purkinje Cells in Culture
Michisuke Yuzaki, Douglas Forrest, Lynne M. Verselis, Shaiu C. Sun, Tom Curran, and John A. Connor

4662 Synchronous Onset of NGF and TrkA Survival Dependence in Developing Dorsal Root Ganglia
Fletcher A. White, Inmaculada Silos-Santiago, Derek C. Molliver, Merry Nishimura, Heidi Phillips, Mariano Barbacid, and William D. Snider

4673 Glial Growth Factor 2, a Soluble Neuregulin, Directly Increases Schwann Cell Motility and Indirectly Promotes Neurite Outgrowth
Nagesh K. Mahanthappa, Eva S. Anton, and William D. Matthew

4684 Functional GABAergic Synaptic Connection in Neonatal Mouse Barrel Cortex
Ariel Agmon, Greg Hollrigel, and Diane K. O'Dowd

4696 Potassium Deprivation-Induced Apoptosis of Cerebellar Granule Neurons: A Sequential Requirement for New mRNA and Protein Synthesis, ICE-Like Protease Activity, and Reactive Oxygen Species
Jörg B. Schulz, Michael Weller, and Thomas Klockgether

4707 Regulation of ERK (Extracellular Signal Regulated Kinase), Part of the Neurotrophin Signal Transduction Cascade, in the Rat Mesolimbic Dopamine System by Chronic Exposure to Morphine or Cocaine
Melissa T. Berhow, Noboru Hiroi, and Eric J. Nestler

4716 The Analysis of Complex Motion Patterns by Form/Cue Invariant MSTd Neurons
Bard J. Geesaman and Richard A. Andersen

4733 Chemically Mediated Cross-Excitation in Rat Dorsal Root Ganglia
Ron Amir and Marshall Devor

4742 Involvement of Cytokines in Lipopolysaccharide-Induced Facilitation of CGRP Release from Capsaicin-Sensitive Nerves in the Trachea: Studies with Interleukin-1β and Tumor Necrosis Factor-α
Xiao-Ying Hua, Ping Chen, Alyson Fox, and Robert R. Myers

4749 Compartmental Localization of a Metabotropic Glutamate Receptor (mGluR7): Two Different Active Sites at a Retinal Synapse
Johann Helmut Brandstätter, Peter Koulen, Rainer Kuhn, Herman van der Putten, and Heinz Wässle

4757 Divergent Projections from the Anterior Inferotemporal Area TE to the Perirhinal and Entorhinal Cortices in the Macaque Monkey
K. S. Saleem and K. Tanaka

4776 Use-Dependent Exaggeration of Neuronal Injury after Unilateral Sensorimotor Cortex Lesions
Dorothy A. Kozlowski, Debra C. James, and Timothy Schallert

4787 Role of the Amygdala in the Coordination of Behavioral, Neuroendocrine, and Prefrontal Cortical Monoamine Responses to Psychological Stress in the Rat
Lee E. Goldstein, Ann M. Rasmusson, B. Steve Bunney, and Robert H. Roth

4799 Protein Kinase and G-Protein Regulation of Ca^{2+} Currents in *Hermissenda* Photoreceptors by 5-HT and GABA
Ebenezer N. Yamoah and Terry Crow

4810 Comparative Study of Pre- and Postsynaptic 5-HT_{1A} Receptor Modulation of Anxiety in Two Ethological Animal Tests
Sandra E. File, Luis E. Gonzalez, and Nick Andrews

4816 Dextroamphetamine Enhances "Neural Network-Specific" Physiological Signals: A Positron-Emission Tomography rCBF Study
Venkata S. Mattay, Karen Faith Berman, Jill L. Ostrem, Giuseppe Esposito, John D. Van Horn, Llewellyn B. Bigelow, and Daniel R. Weinberger

NUMBER 16, AUGUST 1996

4823 Dopaminergic Regulation of Progesterone Receptors: Brain D5 Dopamine Receptors Mediate Induction of Lordosis by D1-Like Agonists in Rats
Ede Marie Apostolakis, Janos Garai, Charles Fox, Carolyn L. Smith, Stanley J. Watson, James H. Clark, and Bert W. O'Malley

4835 Characterization of Functional GABAergic Synapses Formed between Rat Hypothalamic Neurons and Pituitary Intermediate Lobe Cells in Coculture: Ca^{2+} Dependence of Spontaneous IPSCs
Pierrick Poisbeau, Frédérique René, Christophe Egles, Jean-Marc Félix, Paul Feltz, and Rémy Schlichter

4846 Voltage-Gated K^+ Channel β Subunits: Expression and Distribution of Kvβ1 and Kvβ2 in Adult Rat Brain
Kenneth J. Rhodes, Michael M. Monaghan, Nestor X. Barrezueta, Stanley Nawoschik, Zewditu Bekele-Arcuri, Maria F. Matos, Kensuke Nakahira, Lee E. Schechter, and James S. Trimmer

4861 Changes in the Electrical Properties of Supraoptic Nucleus Oxytocin and Vasopressin Neurons during Lactation
Javier E. Stern and William E. Armstrong

4872 Plasticity in $GABA_A$ Receptor Subunit mRNA Expression by Hypothalamic Magnocellular Neurons in the Adult Rat
Valérie S. Fénelon and Allan E. Herbison

4881 Effects of Salicylate and Lanthanides on Outer Hair Cell Motility and Associated Gating Charge
Seiji Kakehata and Joseph Santos-Sacchi

4890 Multiple Components of Ca^{2+} Channel Facilitation in Cerebellar Granule Cells: Expression of Facilitation during Development in Culture
H. Rheinallt Parri and Jeffry B. Lansman

4903 Reduction of Calcium Currents by Lambert–Eaton Syndrome Sera: Motoneurons Are Preferentially Affected, and L-Type Currents Are Spared
Kelly D. García and Kurt G. Beam

4914 The Clustering of Axonal Sodium Channels during Development of the Peripheral Nervous System
Ian Vabnick, Sanja D. Novaković, S. Rock Levinson, Melitta Schachner, and Peter Shrager

4923 Site Specificity of Short-Term and Long-Term Habituation in the Tail-Elicited Siphon Withdrawal Reflex of *Aplysia*
Mark Stopfer, Xinghai Chen, Yu-Tzu Tai, Gloria S. Huang, and Thomas J. Carew

4933 Heterosynaptic Facilitation of Tail Sensory Neuron Synaptic Transmission during Habituation in Tail-Induced Tail and Siphon Withdrawal Reflexes of *Aplysia*
Mark Stopfer and Thomas J. Carew

4949 Myomodulin Gene of *Lymnaea*: Structure, Expression, and Analysis of Neuropeptides
Elaine Kellett, Stephen J. Perry, Niovi Santama, Belinda M. Worster, Paul R. Benjamin, and Julian F. Burke

4958 Activation of Intrinsic and Synaptic Currents in Leech Heart Interneurons by Realistic Waveforms
Øystein H. Olsen and Ronald L. Calabrese

4971 Multiple Actions of 1S,3R-ACPD in Modulating Endogenous Synaptic Transmission to Spinal Respiratory Motoneurons
Xiao-Wei Dong, Didier Morin, and Jack L. Feldman

4983 The α_{1E} Calcium Channel Exhibits Permeation Properties Similar to Low-Voltage-Activated Calcium Channels
Emmanuel Bourinet, Gerald W. Zamponi, Anthony Stea, Tuck W. Soong, Bertram A. Lewis, Lisa P. Jones, David T. Yue, and Terry P. Snutch

4994 Neural Influence on Protein Kinase C Isoform Expression in Skeletal Muscle
Lutz Hilgenberg, Simone Yearwood, Stuart Milstein, and Kathryn Miles

5004 Vicious Cycle Involving Na^+ Channels, Glutamate Release, and NMDA Receptors Mediates Delayed Neurodegeneration through Nitric Oxide Formation
Paul J. L. M. Strijbos, Michael J. Leach, and John Garthwaite

5014 Modification of NMDA Receptor Channels and Synaptic Transmission by Targeted Disruption of the NR2C Gene
Alexander K. Ebralidze, David J. Rossi, Susumu Tonegawa, and N. Traverse Slater

5026 Two Alternative Promoters Direct Neuron-Specific Expression of the Rat Microtubule-Associated Protein 1B Gene
Dong Liu and Itzhak Fischer

5037 Ultrastructural Evidence for Prominent Distribution of the μ-Opioid Receptor at Extrasynaptic Sites on Noradrenergic Dendrites in the Rat Nucleus Locus Coeruleus
Elisabeth J. Van Bockstaele, Eric E. O. Colago, Peter Cheng, Akiyoshi Moriwaki, George R. Uhl, and Virginia M. Pickel

5049 Distinct Properties of Neuronal and Astrocytic Endopeptidase 3.4.24.16: A Study on Differentiation, Subcellular Distribution, and Secretion Processes
Bruno Vincent, Alain Beaudet, Pascale Dauch, Jean-Pierre Vincent, and Frédéric Checler

5060 Optical Recordings of the Effects of Cholinergic Ligands on Neurons in the Ganglion Cell Layer of Mammalian Retina
William H. Baldridge

5073 Hippocampal Astrocytes *In Situ* Respond to Glutamate Released from Synaptic Terminals
James T. Porter and Ken D. McCarthy

5082 Role of Olf-1 and Pax-6 Transcription Factors in Neurodevelopment
Janine A. Davis and Randall R. Reed

5095 Oligodendroglia Regulate the Regional Expansion of Axon Caliber and Local Accumulation of Neurofilaments during Development Independently of Myelin Formation
Ivelisse Sánchez, Linda Hassinger, Peter A. Paskevich, H. David Shine, and Ralph A. Nixon

5106 Retinal Ganglion Cell Axons Recognize Specific Guidance Cues Present in the Deafferented Adult Rat Superior Colliculus
Mathias Bähr and Andrea Wizenmann

5117 Onset of Electrical Excitability during a Period of Circus Plasma Membrane Movements in Differentiating *Xenopus* Neurons
Eric C. E. Olson

5130 Precision of Reinnervation and Synaptic Remodeling Observed in Neuromuscular Junctions of Living Frogs
Stephanie H. Astrow, Vladimir Pitaevski, and Albert A. Herrera

5141 Actions of Substance P on Rat Neostriatal Neurons *In Vitro*
Toshihiko Aosaki and Yasuo Kawaguchi

5154 Expression of Normal and Mutant Huntingtin in the Developing Brain
Pradeep G. Bhide, Michelle Day, Ellen Sapp, Cordula Schwarz, Ami Sheth, Johnny Kim, Anne B. Young, John Penney, Jeffrey Golden, Neil Aronin, and Marian DiFiglia

5167 Neural Mechanisms of Visual Working Memory in Prefrontal Cortex of the Macaque
Earl K. Miller, Cynthia A. Erickson, and Robert Desimone

5181 Implants of Encapsulated Human CNTF-Producing Fibroblasts Prevent Behavioral Deficits and Striatal Degeneration in a Rodent Model of Huntington's Disease
Dwaine F. Emerich, Mark D. Lindner, Shelley R. Winn, Er-Yun Chen, Beata R. Frydel, and Jeffrey H. Kordower

5195 Melanocortin Antagonists Define Two Distinct Pathways of Cardiovascular Control by α- and γ-Melanocyte-Stimulating Hormones
Si-Jia Li, Károly Varga, Phillip Archer, Victor J. Hruby, Shubh D. Sharma, Robert A. Kesterson, Roger D. Cone, and George Kunos

5202 Collateral Sprouting of Uninjured Primary Afferent A-Fibers into the Superficial Dorsal Horn of the Adult Rat Spinal Cord after Topical Capsaicin Treatment to the Sciatic Nerve
Richard J. Mannion, Tim P. Doubell, Richard E. Coggeshall, and Clifford J. Woolf

5209 Synchronous Activity in Locus Coeruleus Results from Dendritic Interactions in Pericoerulear Regions
Masaru Ishimatsu and John T. Williams

5218 Differential Sensitivity of Human Visual Cortex to Faces, Letterstrings, and Textures: A Functional Magnetic Resonance Imaging Study
Aina Puce, Truett Allison, Maryam Asgari, John C. Gore, and Gregory McCarthy

5229 Behavioral and Neurochemical Recovery from Partial 6-Hydroxydopamine Lesions of the Substantia Nigra Is Blocked by Daily Treatment with Glutamate Receptor Antagonists MK-801 and CPP
Adriana Emmi, Heshmat Rajabi, and Jane Stewart

5238 Trace Eyeblink Conditioning Increases CA1 Excitability in a Transient and Learning-Specific Manner
James R. Moyer Jr., Lucien T. Thompson, and John F. Disterhoft

5249 Haltere Afferents Provide Direct, Electrotonic Input to a Steering Motor Neuron in the Blowfly, *Calliphora*
Amir Fayyazuddin and Michael H. Dickinson

5257 Three Cases of Enduring Memory Impairment after Bilateral Damage Limited to the Hippocampal Formation
Nancy L. Rempel-Clower, Stuart M. Zola, Larry R. Squire, and David G. Amaral

5280 *Correction:* M. H. Cortazzo et al. have submitted a corrected figure for their article "Nerve Growth Factor (NGF)-Mediated Protection of Neural Crest Cells from Antimitotic Agent-Induced Apoptosis: The Role of the Low-Affinity NGF Receptor," which appeared in the June 15, 1996 issue (pp. 3895–3899).

NUMBER 17, SEPTEMBER 1996

5281 Gonadotropin-Releasing Hormone and NMDA Receptor Gene Expression and Colocalization Change during Puberty in Female Rats
Andrea C. Gore, T. J. Wu, Jacob J. Rosenberg, and James L. Roberts

5290 Morphology and Physiology of Cortical Neurons in Layer I
Shaul Hestrin and William E. Armstrong

5301 Laminar Localization, Morphology, and Physiological Properties of Pyramidal Neurons that Have the Low-Threshold Calcium Current in the Guinea-Pig Medial Frontal Cortex
Elvira de la Peña and Emilio Geijo-Barrientos

5312 Calcium-Dependent Paired-Pulse Facilitation of Miniature EPSC Frequency Accompanies Depression of EPSCs at Hippocampal Synapses in Culture
Dana D. Cummings, Karen S. Wilcox, and Marc A. Dichter

5324 Bidirectional Regulation of Protein Kinase Mζ in the Maintenance of Long-Term Potentiation and Long-Term Depression
Sabina Hrabetova and Todd Charlton Sacktor

5334 Long-Term Potentiation in Distinct Subtypes of Hippocampal Nonpyramidal Neurons
Gianmaria Maccaferri and Chris J. McBain

5344 A Distinct Pattern of Trophic Factor Expression in Myelin-Deficient Nerves of Trembler Mice: Implications for Trophic Support by Schwann Cells
Hana C. Hyman Friedman, Tony N. Jelsma, Garth M. Bray, and Albert J. Aguayo

5351 Impaired Differentiation of Schwann Cells in Transgenic Mice with Increased *PMP22* Gene Dosage
Josef P. Magyar, Rudolf Martini, Thomas Ruelicke, Adriano Aguzzi, Katrin Adlkofer, Zlatko Dembic, Jürgen Zielasek, Klaus V. Toyka, and Ueli Suter

5361 Mice Lacking Brain-Derived Neurotrophic Factor Exhibit Visceral Sensory Neuron Losses Distinct from Mice Lacking NT4 and Display a Severe Developmental Deficit in Control of Breathing
Jeffery T. Erickson, Joanne C. Conover, Veronique Borday, Jean Champagnat, and David M. Katz

5372 Extracellular Synthesis of cADP-Ribose from Nicotinamide-Adenine Dinucleotide by Rat Cortical Astrocytes in Culture
Ludmila Pawlikowska, Susan E. Cottrell, Matthew B. Harms, Ya Li, and Paul A. Rosenberg

5382 Increased Susceptibility to Induction of Long-Term Depression and Long-Term Potentiation Reversal during Aging
Christopher M. Norris, Donna L. Korol, and Thomas C. Foster

5393 Mechanisms of H^+ and Na^+ Changes Induced by Glutamate, Kainate, and D-Aspartate in Rat Hippocampal Astrocytes
Christine R. Rose and Bruce R. Ransom

5405 Ion Binding and Permeation at the GABA Transporter GAT1
Sela Mager, Nurit Kleinberger-Doron, Gilmor I. Keshet, Norman Davidson, Baruch I. Kanner, and Henry A. Lester

5415 Stoichiometry of a Recombinant $GABA_A$ Receptor
Yongchang Chang, Ruoping Wang, Sonal Barot, and David S. Weiss

5425 Calcium Influx via the NMDA Receptor Induces Immediate Early Gene Transcription by a MAP Kinase/ERK-Dependent Mechanism
Zhengui Xia, Henryk Dudek, Cindy K. Miranti, and Michael E. Greenberg

5437 Systemic Administration of a Nerve Growth Factor Conjugate Reverses Age-Related Cognitive Dysfunction and Prevents Cholinergic Neuron Atrophy
Cristina Bäckman, Gregory M. Rose, Barry J. Hoffer, Michael A. Henry, Raymond T. Bartus, Phillip Friden, and Ann-Charlotte Granholm

5443 Traffic of Dynamin within Individual *Drosophila* Synaptic Boutons Relative to Compartment-Specific Markers
Patricia S. Estes, Jack Roos, Alexander van der Bliek, Regis B. Kelly, K. S. Krishnan, and Mani Ramaswami

5457 Ca^{2+}-Permeable AMPA/Kainate and NMDA Channels: High Rate of Ca^{2+} Influx Underlies Potent Induction of Injury
You Ming Lu, Hong Zhen Yin, Juna Chiang, and John H. Weiss

5466 Regenerative Proliferation in Organ Cultures of the Avian Cochlea: Identification of the Initial Progenitors and Determination of the Latency of the Proliferative Response
Mark E. Warchol and Jeffrey T. Corwin

5478 Astrocyte Growth, Reactivity, and the Target of the Antiproliferative Antibody, TAPA
Eldon E. Geisert Jr., LiJuan Yang, and Michael H. Irwin

5488 Spatially Restricted Increase in Polysialic Acid Enhances Corticospinal Axon Branching Related to Target Recognition and Innervation
Maryellen M. Daston, Martin Bastmeyer, Urs Rutishauser, and Dennis D. M. O'Leary

5498 Retroviral Misexpression of *engrailed* Genes in the Chick Optic Tectum Perturbs the Topographic Targeting of Retinal Axons
Glenn C. Friedman and Dennis D. M. O'Leary

5510 Anatomical Demonstration of Ocular Dominance Columns in Striate Cortex of the Squirrel Monkey
Jonathan C. Horton and Davina R. Hocking

5523 Expression of Normal and Mutant Huntingtin in the Developing Brain
Pradeep G. Bhide, Michelle Day, Ellen Sapp, Cordula Schwarz, Ami Sheth, Johnny Kim, Anne B. Young, John Penney, Jeffrey Golden, Neil Aronin, and Marian DiFiglia

5536 Trace Eyeblink Conditioning Increases CA1 Excitability in a Transient and Learning-Specific Manner
James R. Moyer Jr., Lucien T. Thompson, and John F. Disterhoft

5547 Evidence for Differential Control of Posterior Hypothalamic, Supramammillary, and Medial Mammillary Theta-Related Cellular Discharge by Ascending and Descending Pathways
Ian J. Kirk, Scott D. Oddie, Jan Konopacki, and Brian H. Bland

5555 A Diurnal Rhythm of Stimulatory Input to the Hypothalamo–Pituitary–Adrenal System as Revealed by Timed Intrahypothalamic Administration of the Vasopressin V1 Antagonist
Andries Kalsbeek, Joop J. van Heerikhuize, Joke Wortel, Ruud M. Buijs

NUMBER 18, SEPTEMBER 1996

5567 Multiple Channel Types Contribute to the Low-Voltage-Activated Calcium Current in Hippocampal CA3 Pyramidal Neurons
Robert B. Avery and Daniel Johnston

5583 Tau Binds to the Distal Axon Early in Development of Polarity in a Microtubule- and Microfilament-Dependent Manner
Martina Kempf, Albrecht Clement, Andreas Faissner, Gloria Lee, and Roland Brandt

5593 Reduced Growth Cone Motility in Cultured Neurons from *Drosophila* Memory Mutants with a Defective cAMP Cascade
Yun-Taik Kim and Chun-Fang Wu

5603 Modulation of Excitatory Synaptic Transmission by Adenosine Released from Single Hippocampal Pyramidal Neurons
James M. Brundege and Thomas V. Dunwiddie

5613 Structure, Functional Expression, and Cerebral Localization of the Levocabastine-Sensitive Neurotensin/Neuromedin N Receptor from Mouse Brain
Jean Mazella, Jean-Marie Botto, Eric Guillemare, Thierry Coppola, Philippe Sarret, and Jean-Pierre Vincent

5621 The Regulation of Heme Turnover and Carbon Monoxide Biosynthesis in Cultured Primary Rat Olfactory Receptor Neurons
Tatsuya Ingi, George Chiang, and Gabriele V. Ronnett

5629 Rapid, Active Hair Bundle Movements in Hair Cells from the Bullfrog's Sacculus
Michael E. Benser, Robert E. Marquis, and A. J. Hudspeth

5644 Selective Vulnerability of Mouse CNS Neurons to Latent Infection with a Neuroattenuated Herpes Simplex Virus-1
Santosh Kesari, Virginia M.-Y. Lee, S. Moira Brown, John Q. Trojanowski, and Nigel W. Fraser

5654 Bcl-2 Expression in Neural Cells Blocks Activation of ICE/CED-3 Family Proteases during Apoptosis
Anu Srinivasan, Lyndon M. Foster, Maria-Pia Testa, Tönis Örd, Robert W. Keane, Dale E. Bredesen, and Celik Kayalar

5661 Determinants of the Time Course of Facilitation at the Granule Cell to Purkinje Cell Synapse
Pradeep P. Atluri and Wade G. Regehr

5672 Enhanced Fast Synaptic Transmission and a Delayed Depolarization Induced by Transient Potassium Current Blockade in Rat Hippocampal Slice as Studied by Optical Recording
Michael E. Barish, Michinori Ichikawa, Takashi Tominaga, Gen Matsumoto, and Toshio Iijima

5688 Mitochondrial Depolarization in Glutamate-Stimulated Neurons: An Early Signal Specific to Excitotoxin Exposure
R. James White and Ian J. Reynolds

5698 Reinnervation Accuracy of the Rat Femoral Nerve by Motor and Sensory Neurons
Roger D. Madison, Simon J. Archibald, and Thomas M. Brushart

5704 Retinoic Acid Stimulates α-CAMKII Gene Expression in PC12 Cells at a Distinct Transcription Initiation Site
Jing Chen and Paul T. Kelly

5715 Laser Ablation of *Drosophila* Embryonic Motoneurons Causes Ectopic Innervation of Target Muscle Fibers
Te Ning Chang and Haig Keshishian

5727 A Spatial Gradient of Tau Protein Phosphorylation in Nascent Axons
James W. Mandell and Gary A. Banker

5741 Modulation of the Inhibitory Substrate Properties of Oligodendrocytes by Platelet-Derived Growth Factor
Dirk M. Lang, Michael G. Hille, Martin E. Schwab, and Claudia A. O. Stuermer

5749 Development of an Identified Spinal Commissural Interneuron Population in an Amniote: Neurons of the Avian Hofmann Nuclei
Anne Lill Eide and Joel C. Glover

5762 Interkinetic and Migratory Behavior of a Cohort of Neocortical Neurons Arising in the Early Embryonic Murine Cerebral Wall
Takao Takahashi, Richard S. Nowakowski, and Verne S. Caviness Jr.

5777 Distribution of Networks Generating and Coordinating Locomotor Activity in the Neonatal Rat Spinal Cord *In Vitro*: A Lesion Study
Ole Kjaerulff and Ole Kiehn

5795 Comparison of Neurodegenerative Pathology in Transgenic Mice Overexpressing V717F β-Amyloid Precursor Protein and Alzheimer's Disease
Eliezer Masliah, Abbyann Sisk, Margaret Mallory, Lennart Mucke, Dale Schenk, and Dora Games

5812 Emotional and Behavioral Correlates of Mediodorsal Thalamic Neurons during Associative Learning in Rats
Tatsuki Oyoshi, Hisao Nishijo, Tetsuhiko Asakura, Yusaku Takamura, and Taketoshi Ono

5830 Cellular Organization of an Antennal Mechanosensory Pathway in the Cockroach *Periplaneta americana*
John A. Burdohan and Christopher M. Comer

5844 Correspondence of Escape-Turning Behavior with Activity of Descending Mechanosensory Interneurons in the Cockroach, *Periplaneta americana*
Shuping Ye and Christopher M. Comer

5854 Intracellular Characterization of Song-Specific Neurons in the Zebra Finch Auditory Forebrain
Michael S. Lewicki

5864 Interaction of Perirhinal Cortex with the Fornix–Fimbria: Memory for Objects and "Object-in-Place" Memory
David Gaffan and Amanda Parker

5870 Modulatory Actions of Dopamine on NMDA Receptor-Mediated Responses Are Reduced in D_{1A}-Deficient Mutant Mice
Michael S. Levine, Katharine L. Altemus, Carlos Cepeda, Howard C. Cromwell, Cynthia Crawford, Marjorie A. Ariano, John Drago, David R. Sibley, and Heiner Westphal

5883 Neuropeptide Y-Mediated Long-Term Depression of Excitatory Activity in Suprachiasmatic Nucleus Neurons
Anthony N. van den Pol, Karl Obrietan, Gong Chen, and Andrei B. Belousov

NUMBER 19, OCTOBER 1996

5897 Bcl-2 Sensitivity Differentiates Two Pathways for Motoneuronal Death in the *wobbler* Mutant Mouse
Muriel Coulpier, Marie-Pierre Junier, Marc Peschanski, and Patrick A. Dreyfus

5905 Mobility of Synaptic Vesicles in Nerve Endings Monitored by Recovery from Photobleaching of Synaptic Vesicle-Associated Fluorescence
Kajetan Kraszewski, Laurie Daniell, Olaf Mundigl, and Pietro De Camilli

5914 Cholinergic Stimulation of AP-1 and NFκB Transcription Factors Is Differentially Sensitive to Oxidative Stress in SH-SY5Y Neuroblastoma: Relationship to Phosphoinositide Hydrolysis
Xiaohua Li, Ling Song, and Richard S. Jope

5923 Are the Interlaminar Zones of the Ferret Dorsal Lateral Geniculate Nucleus Actually Part of the Perigeniculate Nucleus?
Maria V. Sanchez-Vives, Thierry Bal, Uhnoh Kim, Marcus von Krosigk, and David A. McCormick

5942 Characterizing the Site and Mode of Action of Dynorphin at Hippocampal Mossy Fiber Synapses in the Guinea Pig
Pablo E. Castillo, Paul A. Salin, Marc G. Weisskopf, and Roger A. Nicoll

5951 Induction of Hippocampal Long-Term Depression Requires Release of Ca^{2+} from Separate Presynaptic and Postsynaptic Intracellular Stores
Magali Reyes and Patric K. Stanton

5961 p53-Independent Cyclin G Expression in a Group of Mature Neurons and Its Enhanced Expression during Nerve Regeneration
Naonori Morita, Sumiko Kiryu, and Hiroshi Kiyama

5967 Protein Synthesis within Dendrites: Glycosylation of Newly Synthesized Proteins in Dendrites of Hippocampal Neurons in Culture
Enrique R. Torre and Oswald Steward

5979 Metabotropic Glutamate Receptors Activate G-Protein-Coupled Inwardly Rectifying Potassium Channels in *Xenopus* Oocytes
Julie A. Saugstad, Thomas P. Segerson, and Gary L. Westbrook

5986 α_2-Adrenergic Agonists Induce Basic Fibroblast Growth Factor Expression in Photoreceptors *In Vivo* and Ameliorate Light Damage
Rong Wen, Tong Cheng, Yiwen Li, Wei Cao, and Roy H. Steinberg

5993 A Missense Mutation in the Sodium Channel Scn8a Is Responsible for Cerebellar Ataxia in the Mouse Mutant *jolting*
David C. Kohrman, Marianne R. Smith, Alan L. Goldin, John Harris, and Miriam H. Meisler

6000 Modulation of High Voltage-Activated Calcium Channels by Somatostatin in Acutely Isolated Rat Amygdaloid Neurons
Félix Viana and Bertil Hille

6012 Activation of Metabotropic Glutamate Receptor Subtype mGluR1 Contributes to Post-Traumatic Neuronal Injury
Alexey Mukhin, Lei Fan, and Alan I. Faden

6021 Specific Domains of β-Amyloid from Alzheimer Plaque Elicit Neuron Killing in Human Microglia
Dana Giulian, Lanny J. Haverkamp, J. H. Yu, William Karshin, D. Tom, Jun Li, Joel Kirkpatrick, Y.-M. Kuo, and A. E. Roher

6038 Glutathione Is Involved in the Granular Storage of Dopamine in Rat PC12 Pheochromocytoma Cells: Implications for the Pathogenesis of Parkinson's Disease
Benjamin Drukarch, Cornelis A. M. Jongenelen, Erik Schepens, Cornelis H. Langeveld, and Johannes C. Stoof

6046 Peptidergic Modulation of Synaptic Transmission in the Parabrachial Nucleus *In Vitro*: Importance of Degradative Enzymes in Regulating Synaptic Efficacy
Tarek M. Saleh, Samuel B. Kombian, Jeffrey A. Zidichouski, and Quentin J. Pittman

6056 Dynamic Organization of Endocytic Pathways in Axons of Cultured Sympathetic Neurons
Caroline C. Overly and Peter J. Hollenbeck

6065 Microtubule Assembly in Growing Dendrites
Jun Wang, Wenqian Yu, Peter W. Baas, and Mark M. Black

6079 Activation of a Metabotropic Excitatory Amino Acid Receptor Potentiates Spike-Driven Calcium Increases in Neurons of the Dorsolateral Septum
Fang Zheng, Joel P. Gallagher, and John A. Connor

6089 Flk-1, a Receptor for Vascular Endothelial Growth Factor (VEGF), Is Expressed by Retinal Progenitor Cells
Xianjie Yang and Constance L. Cepko

6100 Adaptive Increase in D_3 Dopamine Receptors in the Brain Reward Circuits of Human Cocaine Fatalities
Julie K. Staley and Deborah C. Mash

6107 Axonal Interactions Regulate Schwann Cell Apoptosis in Developing Peripheral Nerve: Neuregulin Receptors and the Role of Neuregulins
Judith B. Grinspan, Mark A. Marchionni, Matthew Reeves, Markella Coulaloglou, and Steven S. Scherer

6119 Lipocalin-Type Prostaglandin D Synthase (β-Trace) Is Located in Pigment Epithelial Cells of Rat Retina and Accumulates within Interphotoreceptor Matrix
Carsten T. Beuckmann, William C. Gordon, Yoshihide Kanaoka, Naomi Eguchi, Victor L. Marcheselli, Dimitry Y. Gerashchenko, Yoshihiro Urade, Osamu Hayaishi, and Nicolas G. Bazan

6125 Mitochondrial Dysfunction Is a Primary Event in Glutamate Neurotoxicity
Alejandro F. Schinder, Eric C. Olson, Nicholas C. Spitzer, and Mauricio Montal

6134 Neuron Death in the Substantia Nigra of Weaver Mouse Occurs Late in Development and Is Not Apoptotic
Tinmarlar F. Oo, Richard Blazeski, Susan M. W. Harrison, Claire Henchcliffe, Carol A. Mason, Suzanne K. Roffler-Tarlov, and Robert E. Burke

6146 Dynamics of Cell Migration from the Lateral Ganglionic Eminence in the Rat
J. A. De Carlos, L. López-Mascaraque, and F. Valverde

6157 Hair Cell Differentiation in Chick Cochlear Epithelium after Aminoglycoside Toxicity: *In Vivo* and *In Vitro* Observations
Jennifer S. Stone, Sharon G. Leaño, Lauren P. Baker, and Edwin W Rubel

6175 Consequences of Trisomy 16 for Mouse Brain Development: Corticogenesis in a Model of Down Syndrome
Tarik F. Haydar, Mary E. Blue, Mark E. Molliver, Bruce K. Krueger, and Paul J. Yarowsky

6183 The Leaving or Q Fraction of the Murine Cerebral Proliferative Epithelium: A General Model of Neocortical Neuronogenesis
Takao Takahashi, Richard S. Nowakowski, and Verne S. Caviness Jr.

6197 A Family of Rat CRMP Genes Is Differentially Expressed in the Nervous System
Li-Hsien Wang and Stephen M. Strittmatter

6208 TrkA, But Not TrkC, Receptors Are Essential for Survival of Sympathetic Neurons *In Vivo*
Anne M. Fagan, Hong Zhang, Story Landis, Richard J. Smeyne, Inmaculada Silos-Santiago, and Mariano Barbacid

6219 Functional Anatomic Studies of Memory Retrieval for Auditory Words and Visual Pictures
Randy L. Buckner, Marcus E. Raichle, Francis M. Miezin, and Steve E. Petersen

6236 Specific Induction of Protein Kinase Cδ Subspecies after Transient Middle Cerebral Artery Occlusion in the Rat Brain: Inhibition by MK-801
Susanna Miettinen, Reina Roivainen, Riitta Keinänen, Tomas Hökfelt, and Jari Koistinaho

6246 Ventromedial Preoptic PGE2 Activates Fever-Producing Autonomic Pathways
Thomas E. Scammell, Joel K. Elmquist, John D. Griffin, and Clifford B. Saper

6255 GAT-3, a High-Affinity GABA Plasma Membrane Transporter, Is Localized to Astrocytic Processes, and It Is Not Confined to the Vicinity of GABAergic Synapses in the Cerebral Cortex
Andrea Minelli, Silvia DeBiasi, Nicholas C. Brecha, Laura Vitellaro Zuccarello, and Fiorenzo Conti

6265 Optic Flow Processing in Monkey STS: A Theoretical and Experimental Approach
Markus Lappe, Frank Bremmer, Martin Pekel, Alexander Thiele, and Klaus-Peter Hoffmann

6286 Aging Changes in Voltage-Gated Calcium Currents in Hippocampal CA1 Neurons
Lee W. Campbell, Su-Yang Hao, Olivier Thibault, Eric M. Blalock, and Philip W. Landfield

6296 Neuronal Activity in the Medial Prefrontal Cortex during Pavlovian Eyeblink and Nictitating Membrane Conditioning
Donald A. Powell, Brian Maxwell, and James Penney

6307 Decoding Synapses
Kamal Sen, J. C. Jorge-Rivera, Eve Marder, and L. F. Abbott

6319 Activation of Locus Coeruleus Enhances the Responses of Olfactory Bulb Mitral Cells to Weak Olfactory Nerve Input
Maorong Jiang, Edwin R. Griff, Matthew Ennis, Lee A. Zimmer, and Michael T. Shipley

NUMBER 20, OCTOBER 1996

6331 Immunohistochemical Distribution and Electron Microscopic Subcellular Localization of the Proteasome in the Rat CNS
Elisa Mengual, Paz Arizti, José Rodrigo, José Manuel Giménez-Amaya, and José G. Castaño

6342 $GABA_B$ Receptors, Monoamine Receptors, and Postsynaptic Inositol Trisphosphate-Induced Ca^{2+} Release Are Involved in the Induction of Long-Term Potentiation at Visual Cortical Inhibitory Synapses
Yukio Komatsu

6353 Functional Diversity of P-Type and R-Type Calcium Channels in Rat Cerebellar Neurons
Angelita Tottene, Alessandra Moretti, and Daniela Pietrobon

6364 Impaired Cerebellar Synaptic Plasticity and Motor Performance in Mice Lacking the mGluR4 Subtype of Metabotropic Glutamate Receptor
Roman Pekhletski, Robert Gerlai, Linda S. Overstreet, Xi-Ping Huang, Nadia Agopyan, N. Traverse Slater, Wanda Abramow-Newerly, John C. Roder, and David R. Hampson

6374 $GABA_B$ Receptor-Activated Inwardly Rectifying Potassium Current in Dissociated Hippocampal CA3 Neurons
Deborah L. Sodickson and Bruce P. Bean

6386 Peripheral Neuropathy in Mice Transgenic for a Human *MDR3* P-Glycoprotein Mini-Gene
Jaap J. M. Smit, Frank Baas, Jessica E. Hoogendijk, Gerard H. Jansen, Martin A. van der Valk, Alfred H. Schinkel, Anton J. M. Berns, Dennis Acton, Kees Nooter, Herman Burger, Sander J. Smith, and Piet Borst

6394 The Role of Monoamine Metabolism in Oxidative Glutamate Toxicity
Pamela Maher and John B. Davis

6402 Gamma Oscillation by Synaptic Inhibition in a Hippocampal Interneuronal Network Model
Xiao-Jing Wang and György Buzsáki

6414 Excitatory GABA Responses in Embryonic and Neonatal Cortical Slices Demonstrated by Gramicidin Perforated-Patch Recordings and Calcium Imaging
David F. Owens, Leslie H. Boyce, Marion B. E. Davis, and Arnold R. Kriegstein

6424 Activity-Independent Segregation of Excitatory and Inhibitory Synaptic Terminals in Cultured Hippocampal Neurons
Deanna L. Benson and P. Aryeh Cohen

6433 Nerve Growth Factor and Neurotrophin-3 Differentially Regulate the Proliferation and Survival of Developing Rat Brain Oligodendrocytes
Rick I. Cohen, Ronen Marmur, William T. Norton, Mark F. Mehler, and John A. Kessler

6443 Development of Orientation Preference Maps in Ferret Primary Visual Cortex
Barbara Chapman, Michael P. Stryker, and Tobias Bonhoeffer

6454 Sensory Organ Generation in the Chick Inner Ear
Doris K. Wu and Seung-Ha Oh

6463 Differential Expression of Bone Morphogenetic Proteins in the Developing Vestibular and Auditory Sensory Organs
Seung-Ha Oh, Randy Johnson, and Doris K. Wu

6476 Basic Fibroblast Growth Factor Increases Functional L-Type Ca^{2+} Channels in Fetal Rat Hippocampal Neurons: Implications for Neurite Morphogenesis *In Vitro*
Yoshitsugu Shitaka, Norio Matsuki, Hiroshi Saito, and Hiroshi Katsuki

6490 μ-Opioid and δ-Opioid Receptors Are Expressed in Brainstem Antinociceptive Circuits: Studies Using Immunocytochemistry and Retrograde Tract-Tracing
Alexander E. Kalyuzhny, Ulf Arvidsson, Wei Wu, and Martin W. Wessendorf

6504 Functional Anatomy of Spatial Mental Imagery Generated from Verbal Instructions
Emmanuel Mellet, Nathalie Tzourio, Fabrice Crivello, Marc Joliot, Michel Denis, and Bernard Mazoyer

6513 Spinal Cord Terminations of the Medial Wall Motor Areas in Macaque Monkeys
Richard P. Dum and Peter L. Strick

6526 Respiratory Neurons Mediating the Breuer–Hering Reflex Prolongation of Expiration in Rat
Fumiaki Hayashi, Sharon K. Coles, and Donald R. McCrimmon

6537 Effects of Early-Onset Artificial Strabismus on Pursuit Eye Movements and on Neuronal Responses in Area MT of Macaque Monkeys
Lynne Kiorpes, Pamela J. Walton, Lawrence P. O'Keefe, J. Anthony Movshon, and Stephen G. Lisberger

6554 Neural Delays Shape Selectivity to Interaural Intensity Differences in the Lateral Superior Olive
Thomas J. Park, Benedikt Grothe, George D. Pollak, Gerd Schuller, and Ursula Koch

6567 Properties of Convergent Thalamocortical and Intracortical Synaptic Potentials in Single Neurons of Neocortex
Ziv Gil and Yael Amitai

6579 Coordinated Expression of Dopamine Receptors in Neostriatal Medium Spiny Neurons
D. James Surmeier, Wen-Jie Song, and Zhen Yan

6592 Trans-Synaptic Stimulation of Cortical Acetylcholine Release after Partial 192 IgG-Saporin-Induced Loss of Cortical Cholinergic Afferents
Jim Fadel, Holly Moore, Martin Sarter, and John P. Bruno

6601 Suppression of Noxious Stimulus-Evoked Activity in the Ventral Posterolateral Nucleus of the Thalamus by a Cannabinoid Agonist: Correlation between Electrophysiological and Antinociceptive Effects
William J. Martin, Andrea G. Hohmann, and J. Michael Walker

6612 An Opioidergic Cortical Antinociception Triggering Site in the Agranular Insular Cortex of the Rat that Contributes to Morphine Antinociception
Adam R. Burkey, Earl Carstens, Julia J. Wenniger, Jinwen Tang, and L. Jasmin

NUMBER 21, NOVEMBER 1996

6625 Trophic Effects of Androgen: Receptor Expression and the Survival of Laryngeal Motor Neurons after Axotomy
Julio Pérez and Darcy B. Kelley

6634 AMPA Receptor Flip/Flop Mutants Affecting Deactivation, Desensitization, and Modulation by Cyclothiazide, Aniracetam, and Thiocyanate
Kathryn M. Partin, Mark W. Fleck, and Mark L. Mayer

6648 δ Subunit Inhibits Neurosteroid Modulation of $GABA_A$ Receptors
Wei Jian Zhu, Jian Feng Wang, Karl E. Krueger, and Stefano Vicini

6657 Modulation of Voltage-Gated Calcium Channels by Orphanin FQ in Freshly Dissociated Hippocampal Neurons
Frederic Knoflach, Rainer K. Reinscheid, Olivier Civelli, and John A. Kemp

6665 Neurotrophin Effects on Survival and Expression of Cholinergic Properties in Cultured Rat Septal Neurons under Normal and Stress Conditions
Doris Nonner, Ellen F. Barrett, and John N. Barrett

6676 Axonal Action-Potential Initiation and Na^+ Channel Densities in the Soma and Axon Initial Segment of Subicular Pyramidal Neurons
Costa M. Colbert and Daniel Johnston

6687 Cloning and Functional Expression of a *Drosophila* Metabotropic Glutamate Receptor Expressed in the Embryonic CNS
Marie-Laure Parmentier, Jean-Philippe Pin, Joël Bockaert, and Yves Grau

6695 A Murine Neural-Specific Homolog Corrects Cholinergic Defects in *Caenorhabditis elegans unc-18* Mutants
Keiko Gengyo-Ando, Hitoshi Kitayama, Masahiro Mukaida, and Yoji Ikawa

6703 Ryanodine-Sensitive Component of Calcium Transients Evoked by Nerve Firing at Presynaptic Nerve Terminals
Yan-yi Peng

6713 A SNARE Complex Containing Syntaxin 3 Is Present in Ribbon Synapses of the Retina
Catherine W. Morgans, Johann H. Brandstätter, Joseph Kellerman, Heinrich Betz, and Heinz Wässle

6722 Anion Conductance Behavior of the Glutamate Uptake Carrier in Salamander Retinal Glial Cells
Brian Billups, David Rossi, and David Attwell

6732 Age-Dependent Neuronal and Synaptic Degeneration in Mice Transgenic for the C Terminus of the Amyloid Precursor Protein
Mary Lou Oster-Granite, Donna L. McPhie, Jane Greenan, and Rachael L. Neve

6742 Functional Analysis of Dynactin and Cytoplasmic Dynein in Slow Axonal Transport
James F. Dillman III, Lewis P. Dabney, Sher Karki, Bryce M. Paschal, Erika L. F. Holzbaur, and K. Kevin Pfister

6753 Evidence for p53-Mediated Modulation of Neuronal Viability
Hong Xiang, Daryl W. Hochman, Hideyuki Saya, Toshiyoshi Fujiwara, Philip A. Schwartzkroin, and Richard S. Morrison

6766 Hippocampal Cell Responses in Mice with a Targeted Glucocorticoid Receptor Gene Disruption
Wouter Hesen, Henk Karst, Onno Meijer, Tim J. Cole, Wolfgang Schmid, E. Ronald de Kloet, Gunther Schütz, and Marian Joëls

6775 Aggregation of Sodium Channels Induced by a Postnatally Upregulated Isoform of Agrin
Andrew A. Sharp and John H. Caldwell

6784 Rin, a Neuron-Specific and Calmodulin-Binding Small G-Protein, and Rit Define a Novel Subfamily of Ras Proteins
Ching-Hsien J. Lee, Neil G. Della, Christina E. Chew, and Donald J. Zack

6795 Damage, Repair, and Mutagenesis in Nuclear Genes after Mouse Forebrain Ischemia–Reperfusion
Philip K. Liu, Chung Y. Hsu, Miral Dizdaroglu, Robert A. Floyd, Yoke W. Kow, Asuman Karakaya, Lois E. Rabow, and Jian-K. Cui

6807 Amino Acid Signatures in the Primate Retina
Michael Kalloniatis, Robert E. Marc, and Ralph F. Murry

6830 Differential Regulation of NMDAR1 mRNA and Protein by Estradiol in the Rat Hippocampus
Adam H. Gazzaley, Nancy G. Weiland, Bruce S. McEwen, and John H. Morrison

6839 Characterization of Densin-180, a New Brain-Specific Synaptic Protein of the *O*-Sialoglycoprotein Family
Michelle L. Apperson, Il Soo Moon, and Mary B. Kennedy

6853 Restricted Expression of the Actin-Regulatory Protein, Tropomyosin, Defines Distinct Boundaries, Evaginating Neuroepithelium, and Choroid Plexus Forerunners during Early CNS Development
Kelley Nicholson-Flynn, Sarah E. Hitchcock-DeGregori, and Pat Levitt

6864 Selective Innervation of Fast and Slow Muscle Regions during Early Chick Neuromuscular Development
Victor F. Rafuse, Louise D. Milner, and Lynn T. Landmesser

6878 Changes in the Regulatory Effects of Cell–Cell Interactions on Neuronal AChR Subunit Transcript Levels after Synapse Formation
Marjory S. Levey and Michele H. Jacob

6886 Density-Dependent Feedback Inhibition of Oligodendrocyte Precursor Expansion
Hong Zhang and Robert H. Miller

6896 Differential Survival of Cajal–Retzius Cells in Organotypic Cultures of Hippocampus and Neocortex
José A. Del Río, Bernd Heimrich, Hans Supèr, Víctor Borrell, Michael Frotscher, and Eduardo Soriano

6908 Conditional Ablation of Cerebellar Astrocytes in Postnatal Transgenic Mice
Catherine L. Delaney, Michael Brenner, and Albee Messing

6919 Prominent Expression of Two Forms of Glutamate Decarboxylase in the Embryonic and Early Postnatal Rat Hippocampal Formation
Shannon T. Dupuy and Carolyn R. Houser

6933 Expression of Hepatocyte Growth Factor/Scatter Factor, Its Receptor, *c-met*, and Tissue-Type Plasminogen Activator during Development of the Murine Olfactory System
Douglas P. Thewke and Nicholas W. Seeds

6945 Functional Organization for Direction of Motion and Its Relationship to Orientation Maps in Cat Area 18
Amir Shmuel and Amiram Grinvald

6965 Constructing a New Nigrostriatal Pathway in the Parkinsonian Model with Bridged Neural Transplantation in Substantia Nigra
Feng C. Zhou, Yung H. Chiang, and Yun Wang

6975 Characterization of Antisera Specific to NK1, NK2, and NK3 Neurokinin Receptors and their Utilization to Localize Receptors in the Rat Gastrointestinal Tract
Eileen F. Grady, Peter Baluk, Stephan Böhm, Patrick D. Gamp, Helen Wong, Donald G. Payan, John Ansel, Andrea L. Portbury, John B. Furness, Donald M. McDonald, and Nigel W. Bunnett

6987 Hierarchical Organization of Auditory Temporal Context Sensitivity
Michael S. Lewicki and Benjamin J. Arthur

6999 Enhancement of Behavioral and Electroencephalographic Indices of Waking following Stimulation of Noradrenergic β-Receptors within the Medial Septal Region of the Basal Forebrain
Craig W. Berridge and Stephen L. Foote

7010 Modulation of Forebrain Electroencephalographic Activity in Halothane-Anesthetized Rat via Actions of Noradrenergic β-Receptors within the Medial Septal Region
Craig W. Berridge, Sarah J. Bolen, Michael S. Manley, and Stephen L. Foote

7021 Ovarian Steroid Regulation of Tryptophan Hydroxylase mRNA Expression in Rhesus Macaques
Melanie Pecins-Thompson, Nancy A. Brown, Steven G. Kohama, and Cynthia L. Bethea

7030 A Cerebral Central Pattern Generator in *Aplysia* and Its Connections with Buccal Feeding Circuitry
Ray Perrins and Klaudiusz R. Weiss

7046 Tolerance to Sound Intensity of Binaural Coincidence Detection in the Nucleus Laminaris of the Owl
Jose Luis Peña, Svenja Viete, Yehuda Albeck, and Masakazu Konishi

7055 Local and Distributed Effects of Apomorphine on Fronto-Temporal Function in Acute Unmedicated Schizophrenia
Paul C. Fletcher, Christopher D. Frith, Paul M. Grasby, Karl J. Friston, and Raymond J. Dolan

7063 Localization of Rhythmogenic Networks Responsible for Spontaneous Bursts Induced by Strychnine and Bicuculline in the Rat Isolated Spinal Cord
Enrico Bracci, Laura Ballerini, and Andrea Nistri

7077 Gonadal Steroids Exert Facilitating and "Buffering" Effects on Glucocorticoid-Mediated Transcriptional Regulation of Corticotropin-Releasing Hormone and Corticosteroid Receptor Genes in Rat Brain
Vladimir K. Patchev and Osborne F. X. Almeida

7085 Generalization to Local Remappings of the Visuomotor Coordinate Transformation
Zoubin Ghahramani, Daniel M. Wolpert, and Michael I. Jordan

7096 *Correction:* Christine Weaver et al. have presented corrections to the presentations or descriptions of several figures for their article "Expression and *In Vitro* Function of β_1-Integrin Laminin Receptors in the Developing Avian Ciliary Ganglion," which appeared in the July, 1995 issue.

NUMBER 22, NOVEMBER 1996

7099 Dynamics of Induction and Expression of Long-Term Synaptic Facilitation in *Aplysia*
Juliane Mauelshagen, Gretchen R. Parker, and Thomas J. Carew

7109 Purification of Synaptic Ribbons, Structural Components of the Photoreceptor Active Zone Complex
Frank Schmitz, Martin Bechmann, and Detlev Drenckhahn

7117 Molecular Determinants of β_1 Subunit-Induced Gating Modulation in Voltage-Dependent Na^+ Channels
Naomasa Makita, Paul B. Bennett, and Alfred L. George Jr.

7128 Local Opioid Withdrawal in Rat Single Periaqueductal Gray Neurons *In Vitro*
Billy Chieng and MacDonald J. Christie

7137 Heteromultimerization of G-Protein-Gated Inwardly Rectifying K^+ Channel Proteins GIRK1 and GIRK2 and Their Altered Expression in *weaver* Brain
Y. Joyce Liao, Yuh Nung Jan, and Lily Yeh Jan

7151 Physiological Mapping of Local Inhibitory Inputs to the Hypothalamic Paraventricular Nucleus
Cherif Boudaba, Kriszta Szabó, and Jeffrey G. Tasker

7161 Modulatory Role of Drebrin on the Cytoskeleton within Dendritic Spines in the Rat Cerebral Cortex
Kensuke Hayashi, Ryoki Ishikawa, Li-Hong Ye, Xiao-Ling He, Kuniaki Takata, Kazuhiro Kohama, and Tomoaki Shirao

7171 Translational Machinery in Dendrites of Hippocampal Neurons in Culture
Henri Tiedge and Jürgen Brosius

7182 Detection of Ligands in Regions Anatomically Connected to Neurons Expressing the Eph Receptor Bsk: Potential Roles in Neuron–Target Interaction
Jian-Hua Zhang, Douglas P. Cerretti, Tian Yu, John G. Flanagan, and Renping Zhou

7193 Genetic and Environmental Control of Variation in Retinal Ganglion Cell Number in Mice
Robert W. Williams, Richelle C. Strom, Dennis S. Rice, and Dan Goldowitz

7206 Short-Term GDNF Treatment Provides Long-Term Rescue of Lesioned Nigral Dopaminergic Neurons in a Rat Model of Parkinson's Disease
Christian Winkler, Hansjörg Sauer, Chong S. Lee, and Anders Björklund

7216 Reconstruction of the Nigrostriatal Pathway by Simultaneous Intrastriatal and Intranigral Dopaminergic Transplants
Ivar Mendez, Damaso Sadi, and Murray Hong

7228 Intrinsic Variability of Ocular Dominance Column Periodicity in Normal Macaque Monkeys
Jonathan C. Horton and Davina R. Hocking

7240 A Role in Migration for the αvβ1 Integrin Expressed on Oligodendrocyte Precursors
Richard Milner, Gwynneth Edwards, Charles Streuli, and Charles ffrench-Constant

7253 The Role of Activity in the Development of Long-Range Horizontal Connections in Area 17 of the Ferret
Edward S. Ruthazer and Michael P. Stryker

7270 Coordinate System for Learning in the Smooth Pursuit Eye Movements of Monkeys
Maninder Kahlon and Stephen G. Lisberger

7284 Role of Monkey Nucleus Reticularis Tegmenti Pontis in the Stabilization of Listing's Plane
John Van Opstal, Klaus Hepp, Yasuo Suzuki, and Volker Henn

7297 Organization of Octopus Arm Movements: A Model System for Studying the Control of Flexible Arms
Yoram Gutfreund, Tamar Flash, Yosef Yarom, Graziano Fiorito, Idan Segev, and Binyamin Hochner

7308 An Explanation for Reflex Blink Hyperexcitability in Parkinson's Disease. I. Superior Colliculus
Michele A. Basso, Alice S. Powers, and Craig Evinger

7318 An Explanation for Reflex Blink Hyperexcitability in Parkinson's Disease. II. Nucleus Raphe Magnus
Michele A. Basso and Craig Evinger

7331 The Sympathetic Nervous System Contributes to Capsaicin-Evoked Mechanical Allodynia But Not Pinprick Hyperalgesia in Humans
Maywin Liu, Mitchell B. Max, Suzan Parada, Janet S. Rowan, and Gary J. Bennett

7336 Methylmalonyl-CoA Mutase Induction by Cerebral Ischemia and Neurotoxicity of the Mitochondrial Toxin Methylmalonic Acid
Purnima Narasimhan, Robert Sklar, Matthew Murrell, Raymond A. Swanson, and Frank R. Sharp

7347 Intrahypothalamic Implantation of Progesterone in Castrated Male Whiptail Lizards (*Cnemidophorus inornatus*) Elicits Courtship and Copulatory Behavior and Affects Androgen Receptor- and Progesterone Receptor-mRNA Expression in the Brain
David Crews, John Godwin, Vesta Hartman, Michael Grammer, Ellen A. Prediger, and Rebecca Sheppherd

7353 Different Balance of Excitation and Inhibition in Forward and Feedback Circuits of Rat Visual Cortex
Zhengwei Shao and Andreas Burkhalter

7366 Enhanced Amphetamine Sensitivity and Increased Expression of Dopamine D2 Receptors in Postpubertal Rats after Neonatal Excitotoxic Lesions of the Medial Prefrontal Cortex
Gonzalo Flores, Graham K. Wood, Jin-Jun Liang, Remi Quirion, and Lalit K. Srivastava

7376 Contextual Modulation in Primary Visual Cortex
Karl Zipser, Victor A. F. Lamme, and Peter H. Schiller

7390 Contribution of the Dorsal Nucleus of the Lateral Lemniscus to Binaural Responses in the Inferior Colliculus of the Rat: Interaural Time Delays
Sean A. Kidd and Jack B. Kelly

7398 NMDA Receptor Dependence of Kindling and Mossy Fiber Sprouting: Evidence that the NMDA Receptor Regulates Patterning of Hippocampal Circuits in the Adult Brain
T. Sutula, J. Koch; G. Golarai, Y. Watanabe, and J. O. McNamara

NUMBER 23, DECEMBER 1996

7407 Cloning and Characterization of Postsynaptic Density 93, a Nitric Oxide Synthase Interacting Protein
Jay E. Brenman, Karen S. Christopherson, Sarah E. Craven, Aaron W. McGee, and David S. Bredt

7416 Differential Reinforcing Effects of Cocaine and GBR-12909: Biochemical Evidence for Divergent Neuroadaptive Changes in the Mesolimbic Dopaminergic System
Srihari R. Tella, Bruce Ladenheim, Anne M. Andrews, Steven R. Goldberg, and Jean Lud Cadet

7428 Differential Effects of Protein Synthesis Inhibition on the Activity-Dependent Expression of BDNF Transcripts: Evidence for Immediate-Early Gene Responses from Specific Promoters
Julie C. Lauterborn, Santiago Rivera, Curtiss T. Stinis, Valerie Y. Hayes, Paul J. Isackson, and Christine M. Gall

7437 Ultrastructural Localization of Dendritic Messenger RNA in Adult Rat Hippocampus
Maryann E. Martone, John A. Pollock, Ying Zhang Jones, and Mark H. Ellisman

7447 NMDA Receptor Activation Inhibits Neuronal Volume Regulation after Swelling Induced by Veratridine-Stimulated Na^+ Influx in Rat Cortical Cultures
Kevin B. Churchwell, Stephen H. Wright, Francesco Emma, Paul A. Rosenberg, and Kevin Strange

7458 Two Alternatively Spliced Forms of the cGMP-Gated Channel α-Subunit from Cone Photoreceptor Are Expressed in the Chick Pineal Organ
Wolfgang Bönigk, Frank Müller, Ralf Middendorff, Ingo Weyand, and U. Benjamin Kaupp

7469 Intrinsic Injury Signals Enhance Growth, Survival, and Excitability of *Aplysia* Neurons
Richard T. Ambron, Xiao-Ping Zhang, John D. Gunstream, Michael Povelones, and Edgar T. Walters

7478 D1/D5 Dopamine Receptor Activation Increases the Magnitude of Early Long-Term Potentiation at CA1 Hippocampal Synapses
Nonna A. Otmakhova and John E. Lisman

7487 Metabolic and Genetic Analyses of Apoptosis in Potassium/Serum-Deprived Rat Cerebellar Granule Cells
Timothy M. Miller and Eugene M. Johnson Jr.

7496 Direct Measurement of AMPA Receptor Desensitization Induced by Glutamatergic Synaptic Transmission
Thomas Otis, Su Zhang, and Laurence O. Trussell

7505 Modulation of Inhibitory Transmission by Dopamine in Rat Basal Forebrain Nuclei: Activation of Presynaptic D_1-like Dopaminergic Receptors
Toshihiko Momiyama and J. A. Sim

7513 Expression of Presenilin 1 and 2 (PS1 and PS2) in Human and Murine Tissues
Michael K. Lee, Hilda H. Slunt, Lee J. Martin, Gopal Thinakaran, Grace Kim, Samuel E. Gandy, Mary Seeger, Edward Koo, Donald L. Price, and Sangram S. Sisodia

7526 Atria[1] Natriuretic Peptide Modulates Synaptic Transmission from Osmoreceptor Afferents to the Supraoptic Nucleus
Dominique Richard and Charles W. Bourque

7533 Amyloid β Peptide of Alzheimer's Disease Downregulates Bcl-2 and Upregulates Bax Expression in Human Neurons
Eric Paradis, Hélène Douillard, Maria Koutroumanis, Cynthia Goodyer, and Andréa LeBlanc

7540 Differential Distribution of Functional Receptors for Neuromodulators Evoking Short-Term Heterosynaptic Plasticity in *Aplysia* Sensory Neurons
Zhong-Yi Sun, Beth Kauderer, and Samuel Schacher

7550 Transcription Factor AP-2 Regulates Human Apolipoprotein E Gene Expression in Astrocytoma Cells
Miguel A. García, Jesús Vázquez, Cecilio Giménez, Fernando Valdivieso, and Francisco Zafra

7557 Expression and Subunit Interaction of Voltage-Dependent Ca^{2+} Channels in PC12 Cells
Hongyan Liu, Ricardo Felix, Christina A. Gurnett, Michel De Waard, Derrick R. Witcher, and Kevin P. Campbell

7566 Differential Actions of Serotonin, Mediated by 5-HT_{1B} and 5-HT_{2C} Receptors, on GABA-Mediated Synaptic Input to Rat Substantia Nigra Pars Reticulata Neurons *In Vitro*
Ian M. Stanford and Michael G. Lacey

7574 Reduction of Lower Motor Neuron Degeneration in *wobbler* Mice by *N*-Acetyl-L-Cysteine
Jeffrey T. Henderson, Mohammed Javaheri, Susan Kopko, and John C. Roder

7583 Ionic Currents Underlying Developmental Regulation of Repetitive Firing in *Aplysia* Bag Cell Neurons
Teresa A. Nick, Leonard K. Kaczmarek, and Thomas J. Carew

7599 Multipotent CNS Stem Cells Are Present in the Adult Mammalian Spinal Cord and Ventricular Neuroaxis
Samuel Weiss, Christine Dunne, Jennifer Hewson, Cheryl Wohl, Matt Wheatley, Alan C. Peterson, and Brent A. Reynolds

7610 Metaphase Spindles Rotate in the Neuroepithelium of Rat Cerebral Cortex
Richard J. Adams

7619 cAMP Levels Increased by Activation of Metabotropic Glutamate Receptors Correlate with Visual Plasticity
Silvia N. M. Reid, Nigel W. Daw, Douglas S. Gregory, and Helen Flavin

7627 Emergence of Activity-Dependent, Bidirectional Control of Microtubule-Associated Protein MAP2 Phosphorylation during Postnatal Development
Elizabeth M. Quinlan and Shelley Halpain

7638 Restriction in Cell Fates of Developing Spinal Cord Cells Transplanted to Neural Crest Pathways
Željka Korade and Eric Frank

7649 The Expression Pattern of the Transcription Factor Phox2 Delineates Synaptic Pathways of the Autonomic Nervous System
Marie-Catherine Tiveron, Marie-Rose Hirsch, and Jean-François Brunet

7661 Neurotrophin-3 Is a Survival Factor *In Vivo* for Early Mouse Trigeminal Neurons
George A. Wilkinson, Isabel Fariñas, Carey Backus, Cathleen K. Yoshida, and Louis F. Reichardt

7670 Effects of Binge Pattern Cocaine Administration on Dopamine D_1 and D_2 Receptors in the Rat Brain: An *In Vivo* Study Using Positron Emission Tomography
Hideo Tsukada, Jason Kreuter, Christopher E. Maggos, Ellen M. Unterwald, Takeharu Kakiuchi, Shingo Nishiyama, Masami Futatsubashi, and Mary Jeanne Kreek

7678 Cortical Systems for the Recognition of Emotion in Facial Expressions
Ralph Adolphs, Hanna Damasio, Daniel Tranel, and Antonio R. Damasio

7688 Primary Motor and Sensory Cortex Activation during Motor Performance and Motor Imagery: A Functional Magnetic Resonance Imaging Study
Carlo A. Porro, Maria Pia Francescato, Valentina Cettolo, Mathew E. Diamond, Patrizia Baraldi, Chiara Zuiani, Massimo Bazzocchi, and Pietro E. di Prampero

7699 A Population of Supramammillary Area Calretinin Neurons Terminating on Medial Septal Area Cholinergic and Lateral Septal Area Calbindin-Containing Cells Are Aspartate/Glutamatergic
Csaba Leranth and Jozsef Kiss

7711 Multiple NPY Receptors Coexist in Pre- and Postsynaptic Sites: Inhibition of GABA Release in Isolated Self-Innervating SCN Neurons
Gong Chen and Anthony N. van den Pol

7725 Release of Vasopressin within the Rat Paraventricular Nucleus in Response to Emotional Stress: A Novel Mechanism of Regulating Adrenocorticotropic Hormone Secretion?
Carsten T. Wotjak, Masaharu Kubota, Gudrun Liebsch, Alexandra Montkowski, Florian Holsboer, Inga Neumann, and Rainer Landgraf

7733 Visual Response Properties of Striate Cortical Neurons Projecting to Area MT in Macaque Monkeys
J. Anthony Movshon and William T. Newsome

7742 Cellular Mechanisms of the Augmenting Response: Short-Term Plasticity in a Thalamocortical Pathway
Manuel A. Castro-Alamancos and Barry W. Connors

7757 Synaptic Interactions between Primate Precentral Cortex Neurons Revealed by Spike-Triggered Averaging of Intracellular Membrane Potentials *In Vivo*
Michikazu Matsumura, Dao-fen Chen, Toshiyuki Sawaguchi, Kisou Kubota, and Eberhard E. Fetz

7768 Dopamine and Spatial Working Memory in Rats and Monkeys: Pharmacological Reversal of Stress-Induced Impairment
Beth L. Murphy, Amy F. T. Arnsten, J. David Jentsch, and Robert H. Roth

7776 Dynamic Changes in Striatal Dopamine D_2 and D_3 Receptor Protein and mRNA in Response to 1-Methyl-4-Phenyl-1,2,3,6-Tetrahydropyridine (MPTP) Denervation in Baboons
Richard D. Todd, Juanita Carl, Steven Harmon, Karen L. O'Malley, and Joel S. Perlmutter

7783 Early and Later Adoptions Have Different Long-Term Effects on Male Rat Offspring
Arnaud Barbazanges, Monique Vallée, Willy Mayo, Jamie Day, Hervé Simon, Michel Le Moal, and Stefania Maccari

7791 Behavioral Analysis of Signals that Guide Learned Changes in the Amplitude and Dynamics of the Vestibulo-Ocular Reflex
Jennifer L. Raymond and Stephen G. Lisberger

NUMBER 24, DECEMBER 1996

7803 Release of [^{3}H]-D-Aspartate from Primary Astrocyte Cultures in Response to Raised External Potassium
Eric M. Rutledge and Harold K. Kimelberg

7812 Translocation of RNA Granules in Living Neurons
Roger B. Knowles, James H. Sabry, Maryann E. Martone, Thomas J. Deerinck, Mark H. Ellisman, Gary J. Bassell, and Kenneth S. Kosik

7821 $STEP_{61}$: A Member of a Family of Brain-Enriched PTPs Is Localized to the Endoplasmic Reticulum
Abel Bult, Feisha Zhao, Ronald Dirkx Jr, Ela Sharma, Erika Lukacsi, Michele Solimena, Janice R. Naegele, and Paul J. Lombroso

7832 Thyroid Hormone-Responsive Genes in Developing Cerebellum Include a Novel Synaptotagmin and a *hairless* Homolog
Catherine C. Thompson

7841 Immunocytological and Biochemical Localization and Biological Activity of the Newly Sequenced Cerebral Peptide 2 in *Aplysia*
Gregg A. Phares and Philip E. Lloyd

7853 Polygenic Disease and Retinitis Pigmentosa: Albinism Exacerbates Photoreceptor Degeneration Induced by the Expression of a Mutant Opsin in Transgenic Mice
Muna I. Naash, Harris Ripps, Shihong Li, Yoshinobu Goto, and Neal S. Peachey

7859 Motor Discoordination Results from Combined Gene Disruption of the NMDA Receptor NR2A and NR2C Subunits, But Not from Single Disruption of the NR2A or NR2C Subunit
Hiroshi Kadotani, Tomoo Hirano, Miwako Masugi, Kenji Nakamura, Kazuki Nakao, Motoya Katsuki, and Shigetada Nakanishi

7868 A *Drosophila* Calcium Channel α1 Subunit Gene Maps to a Genetic Locus Associated with Behavioral and Visual Defects
Lee A. Smith, XinJing Wang, Alexandre A. Peixoto, Eric K. Neumann, Linda M. Hall, and Jeffrey C. Hall

7880 Human $\alpha4\beta2$ Neuronal Nicotinic Acetylcholine Receptor in HEK 293 Cells: A Patch-Clamp Study
Bruno Buisson, Murali Gopalakrishnan, Stephen P. Arneric, James P. Sullivan, and Daniel Bertrand

7892 Neuronal Nicotinic Receptor Expression in Sensory Neurons of the Rat Trigeminal Ganglion: Demonstration of $\alpha3\beta4$, a Novel Subtype in the Mammalian Nervous System
Christopher M. Flores, Raquel M. DeCamp, Sonja Kilo, Scott W. Rogers, and Kenneth M. Hargreaves

7902 Enhanced Cleavage of an Atypical Intron of Dopamine D_3-Receptor Pre-mRNA in Chronic Schizophrenia
Claudia Schmauss

7910 Matrix Metalloproteinase-9 (MMP-9) Is Synthesized in Neurons of the Human Hippocampus and Is Capable of Degrading the Amyloid-β Peptide (1–40)
Jon R. Backstrom, Giselle P. Lim, Michael J. Cullen, and Zoltán A. Tökés

7920 Monoclonal Antibody O10 Defines a Conformationally Sensitive Cell-Surface Epitope of Proteolipid Protein (PLP): Evidence that PLP Misfolding Underlies Dysmyelination in Mutant Mice
Martin Jung, Ilse Sommer, Melitta Schachner, and Klaus-Armin Nave

7930 Cell Type-Specific Sorting of Neuropeptides: A Mechanism to Modulate Peptide Composition of Large Dense-Core Vesicles
Judith Klumperman, Sabine Spijker, Jan van Minnen, Hilary Sharp-Baker, August B. Smit, and Wijnand P. M. Geraerts

7941 Neural Cell Type-Specific Expression of QKI Proteins Is Altered in *quakingviable* Mutant Mice
Rebecca J. Hardy, Carrie L. Loushin, Victor L. Friedrich Jr., Qi Chen, Thomas A. Ebersole, Robert A. Lazzarini, and Karen Artzt

7950 Endocytosis of Activated TrkA: Evidence that Nerve Growth Factor Induces Formation of Signaling Endosomes
Mark L. Grimes, Jie Zhou, Eric C. Beattie, Eric C. Yuen, Deborah E. Hall, Janice S. Valletta, Kimberly S. Topp, Jennifer H. LaVail, Nigel W. Bunnett, and William C. Mobley

7965 Changing Patterns of Expression and Subcellular Localization of TrkB in the Developing Visual System
Robert J. Cabelli, Karen L. Allendoerfer, Monte J. Radeke, Andrew A. Welcher, Stuart C. Feinstein, and Carla J. Shatz

7981 Origin of Oligodendrocytes within the Human Spinal Cord
Mohammad Hajihosseini, To Nam Tham, and Monique Dubois-Dalcq

7995 A Role for Nitric Oxide in the Development of the Ferret Retinogeniculate Projection
Karina S. Cramer, Alessandra Angelucci, Jong-On Hahm, Mikhail B. Bogdanov, and Mriganka Sur

8005 Chondroitin Sulfate Proteoglycan and Tenascin in the Wounded Adult Mouse Neostriatum *In Vitro*: Dopamine Neuron Attachment and Process Outgrowth
Monte A. Gates, Helen Fillmore, and Dennis A. Steindler

8019 Influence of Cocaine on the JAK–STAT Pathway in the Mesolimbic Dopamine System
Melissa T. Berhow, Noboru Hiroi, Linda A. Kobierski, Steven E. Hyman, and Eric J. Nestler

8027 Dynamics of Mismatch Correction in the Hippocampal Ensemble Code for Space: Interaction between Path Integration and Environmental Cues
Katalin M. Gothard, William E. Skaggs, and Bruce L. McNaughton

8041 Synaptic Inputs to ON Parasol Ganglion Cells in the Primate Retina
Roy Jacoby, Donna Stafford, Nobuo Kouyama, and David Marshak

8057 Effects of Chronic Treatment with Δ^9-Tetrahydrocannabinol on Cannabinoid-Stimulated [^{35}S]GTPγS Autoradiography in Rat Brain
Laura J. Sim, Robert E. Hampson, Sam A. Deadwyler, and Steven R. Childers

8067 Local Control of Leg Movements and Motor Patterns during Grooming in Locusts
Ari Berkowitz and Gilles Laurent

8079 Central Generation of Grooming Motor Patterns and Interlimb Coordination in Locusts
Ari Berkowitz and Gilles Laurent

8092 Costorage and Corelease of Modulatory Peptide Cotransmitters with Partially Antagonistic Actions on the Accessory Radula Closer Muscle of *Aplysia californica*
F. S. Vilim, D. A. Price, W. Lesser, I. Kupfermann, and K. R. Weiss

8107 Release of Peptide Cotransmitters in *Aplysia*: Regulation and Functional Implications
F. S. Vilim, E. C. Cropper, D. A. Price, I. Kupfermann, and K. R. Weiss

8115 Amiloride Disrupts NaCl versus KCl Discrimination Performance: Implications for Salt Taste Coding in Rats
Alan C. Spector, Nick A. Guagliardo, and Steven J. St. John

8123 Endogenous Activation of μ and δ-1 Opioid Receptors Is Required for Long-Term Potentiation Induction in the Lateral Perforant Path: Dependence on GABAergic Inhibition
Clive R. Bramham and John M. Sarvey

8132 GDNF Selectively Protects Dopamine Neurons Over Serotonin Neurons Against the Neurotoxic Effects of Methamphetamine
Wayne A. Cass

8140 Central Administration of a Growth Hormone (GH) Receptor mRNA Antisense Increases GH Pulsatility and Decreases Hypothalamic Somatostatin Expression in Rats
Elisabeth Pellegrini, Marie Thérèse Bluet-Pajot, Françoise Mounier, Pamela Bennett, Claude Kordon, and Jacques Epelbaum

8149 Spontaneous Discharge and Peripherally Evoked Orofacial Responses of Trigemino–Thalamic Tract Neurons during Wakefulness and Sleep
Brian E. Cairns, Shelly A. McErlane, Miguel C. Fragoso, William G. Jia, and Peter J. Soja

8160 Behavior-Relevant Changes in Nucleus Accumbens Dopamine Transmission Elicited by Food Reinforcement: An Electrochemical Study in Rat
Nicole R. Richardson and Alain Gratton

8170 The Hypothalamic Ventromedial Nuclei Couple Activity in the Hypothalamo–Pituitary–Adrenal Axis to the Morning Fed or Fasted State
SuJean Choi, Cydney Horsley, Shirley Aguila, and Mary F. Dallman

8181 Ultrastructural Localization Suggests that Retinal and Cortical Inputs Access Different Metabotropic Glutamate Receptors in the Lateral Geniculate Nucleus
Dwayne W. Godwin, Susan C. Van Horn, Alev Erişir, Michael Sesma, Carmelo Romano, and S. Murray Sherman

8195 The Influence of Auditory and Visual Distractors on Human Orienting Gaze Shifts
Brian D. Corneil and Douglas P. Munoz

8208 $5HT_{1B}$ Receptor Agonists Inhibit Light-Induced Phase Shifts of Behavioral Circadian Rhythms and Expression of the Immediate–Early Gene *c-fos* in the Suprachiasmatic Nucleus
Gary E. Pickard, E. Todd Weber, Paul A. Scott, Anne F. Riberdy, and Michael A. Rea